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TEACHER PERCEPTIONS AND VERBALIZATIONS ABOUT TEACHING STRATEGIES

by

© LARRY RICHARD WADSWORTH

A THESIS
SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE
OF MASTER OF EDUCATION

DEPARTMENT OF EDUCATIONAL ADMINISTRATION

EDMONTON, ALBERTA
FALL, 1986

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ISBN 0-315-32347-7

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FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled Teacher Perceptions and Verbalizations about Teaching Strategies submitted by Larry Richard Wadsworth in partial fulfilment of the requirements for the degree of Master of Education in Educational Administration.

Eugene W Ratsoy
Supervisor

John E Oster

Date July 9, 1986

ABSTRACT

Research into the way that teachers think and subsequent verbalizations relative to their teaching is a fairly recent area of inquiry for educational researchers. The present study is an exploratory and descriptive study in this area of research. The major purpose of this study was to assess teachers' abilities to verbalize about their use of various teaching strategies. A second purpose was to discover to what extent a supervisory process could affect this ability.

In the first phase of this study, 17 Intern Teachers and 15 Supervising Teachers responded to the survey instrument which was designed to identify perceptions about the desirability and frequency of use of various teaching strategies.

When examining the responses provided by the Supervising Teachers and Intern Teachers, it was found that:

(i) there were some differences between the two group in the level of agreement about the desirability and frequency of use of the 54 teaching strategies,

(ii) Supervising Teachers rated more of the 54 strategies higher on both the Desirability and Frequency Scales than did Intern Teachers,

(iii) there were six of the 54 strategies on either the Desirability Scale or the Frequency Scale for which there was a statistically significant difference between the two groups, and

(iv) both the Supervising Teachers and the Intern Teachers rated the strategies in similar order in terms of importance and frequency of use.

From the seventeen Intern Teachers responding to the survey instrument, six Intern Teachers were selected for participation in the second phase of this study. Stimulated recall was used with each of the six Intern Teachers to elicit verbalizations related to six teaching strategies that were selected from the survey instrument and which could be observed in their classrooms. This was done six times with each of the teachers. In the first three interviews, teachers were provided with feedback from the researcher for the first three strategies but not for the remaining three. In the second set of three interviews the process was reversed. Content analysis was performed using two techniques: a coding procedure, and a macro-analysis. These analyses revealed that:

(i) providing limited feedback doubled the amount of relevant teacher verbalizations,

(ii) when feedback was withheld after first being given the number of teacher statements remained higher than was the case before feedback was given by the researcher,

(iii) all four "types of teacher thinking" in (a) planning thoughts, (b) teaching thoughts, (c) analyzing and evaluating thoughts, and (d) apply to future thoughts, showed increases in number of statements when feedback was provided.

(iv) when teachers verbalized about the use of teaching strategies in their classroom, a "professional argot" was absent,

(v) when feedback was provided the teachers statements contained more background information, they expressed "assimilation" or "accommodation" of a strategy, they used "defensive" and "ego-enhancing" techniques to explain occurrences in the classroom, and

(vi) "reflection on action" increased teachers' awareness about the use of various teaching strategies.

The methodology employed in completing this study and the findings of this study led to the identification of a number of implications and recommendations for further study.

ACKNOWLEDGEMENTS

There are a number of people to whom I wish to express appreciation for their support and assistance throughout this study:

Dr. E. W. Ratsoy, my thesis supervisor, for his supportiveness, guidance, counsel, expertise in research and writing, and untiring support in all phases of this thesis,

Dr. A. MacKay, for his perceptive ideas and comments,

Dr. J. Oster for his valuable suggestions and acting as an examiner,

The Edmonton Public School District, for granting leave to complete this study and allowing access to the principals and teachers whose professional cooperation made the study possible,

the six Intern Teachers, for their professional participation and cooperation,

Miss B. Cherniawski, an Edmonton Public School District teacher, who volunteered to pilot the interview process,

my parents, Mr. and Mrs. Richard Wadsworth, for their supportiveness and financial assistance, and

my wife Monda, and our young children, Cameron and Christie for giving support, encouragement, and for allowing the time to complete this study.

TABLE OF CONTENTS

CHAPTER PAGE

1. INTRODUCTION AND STATEMENT OF THE PROBLEM.................. 1

    Introduction.. 1

    Statement of the Problem 2

    Research Questions.. 2

    Delimitations.. 3

    Limitations.. 3

    Significance of the Study.. 4

    Definitions.. 5

    Overview of Thesis... 7

2. REVIEW OF RELATED LITERATURE.. 9

    Historical Perspective.. 9

        Development of scientific methodology............................ 9

        Establishment of personal characteristics as criteria of effectivenesss.. 10

        Development of evaluative checklists.............................. 11

    Models for Effective Teaching Research................................ 12

        Two models for the study of teaching.............................. 13

    The Scientific Approach.. 16

    The Connection Between the Scientific and Artistic Views of Teacher Effectiveness.. 18

    Evaluation, Supervision, and Teacher Thinking........................ 20

    Teacher Self-Evaluation.. 22

    Supervisory Skills in Evaluation...................................... 22

    Clinical Supervision... 25

CHAPTER PAGE

Knowledge necessary for supervisors.............................. 25

Teacher thoughts in the clinical supervision cycle................. 26

Isotopex.. 27

Teacher Thinking.. 28

Levels of teacher thinking... 30

Teacher decision making... 31

Summary... 33

3. METHODOLOGY OF THE STUDY.................................. 35

Research Design.. 35

Survey Instrument.. 36

Design and Construction of the Instrument........................... 36

Selection of the Participants.. 37

Rationale for the selection of participants........................... 38

Survey instrument returns.. 38

Analysis of the Survey Instrument Data.............................. 38

Interview Design... 39

Description and Selection of the Six Intern Teachers.................. 39

Interview Schedule.. 41

Interview Procedures.. 41

Analysis of the Protocols... 42

Coder Reliability... 43

Macro-analysis of the Protocols....................................... 44

Summary... 44

4. FINDINGS FROM THE SURVEY INSTRUMENT......................... 46

Classroom Climate Strategies.. 47

CHAPTER PAGE

Classroom Interaction Strategies.. 50

Student Management Strategies.. 50

Instructional Organization Strategies.................................. 54

Student Evaluation Strategies... 56

Levels of Agreement.. 58

Strategy Ratings.. 59

Summary.. 61

5. QUANTITATIVE ANALYSIS OF THE INTERVIEW PROTCOLS.......... 63

Strategies 1, 2, and 3.. 64

Strategies 4, 5, and 6.. 71

Types of Teacher Thoughts.. 79

Summary.. 81

6. MACRO-ANALYSIS OF PROTOCOLS.. 84

Feedback Interviews, Strategies 1, 2, and 3......................... 85

No Feedback Interviews, Strategies 1, 2, and 3.................... 90

Comparisons between feedback and no feedback interviews on strategies 1, 2, and 3.. 94

No Feedback Interviews, Strategies 4, 5, and 6.................... 95

Feedback Interviews, Strategies 4, 5, and 6......................... 98

Comparisons between no feedback and feedback interviews on strategies 4, 5, and 6.. 102

Question 7 (Interview Schedule).. 102

Summary.. 105

7. SUMMARY, CONCLUSIONS, AND IMPLICATIONS...................... 108

Purpose.. 108

CHAPTER PAGE

Methodology.......... 108

Analysis techniques.......... 109

Findings and Conclusions.......... 110

Research question 1.......... 110

Research question 2.......... 113

Research question 3.......... 114

Research question 4.......... 115

Research question 5.......... 116

Research question 6.......... 117

Research question 7.......... 118

Implications for Further Research.......... 119

Implications for Current Practice.......... 122

Researcher Reflections of the Findings.......... 123

Concluding Remarks.......... 124

* * *

BIBLIOGRAPHY.......... 126

APPENDICES

A. SURVEY INSTRUMENT.......... 131

B. INTERVIEW SCHEDULE.......... 135

C. 25 STRATEGIES IDENTIFIED IN PROJECT QUEST AS BEING EFFECTIVE.......... 137

D. STANDARD DEVIATIONS FOR INTERN TEACHERS.......... 140

TABLES

TABLES PAGE

3.1 Description of the Resondents to the Survey Instrument.......................... 40

4.1 Differences Between Perceptions of Intern Teachers and Supervising Teachers on Classroom Climate Strategies.. 48

4.2 Differences Between Perceptions of Intern Teachers and Supervising Teachers on Classroom Interaction Strategies............................ 51

4.3 Differences Between Perceptions of InternTeachers and Supervising Teachers on Student Management Strategies.............................. 53

4.4 Differences Between Perceptions of InternTeachers and Supervising Teachers on Instructional Organization Strategies......................... 55

4.5 Differences Between Perceptions of InternTeachers and Supervising Teachers on Student Evaluation Strategies............................... 57

4.6 Comparisons of Levels of Agreement Between Intern Teachers and Supervising Teachers on 54 Strategies.............................. 58

5.1 Number of Teacher Thoughts Under Feedback and No Feedback Situations.. 79

5.2 Percentage Changes in Teacher VerbalizationsBetween Feedback and No Feedback Interviews.. 80

5.3 Percentage of Types of Teacher Thinking in Interview Protocols................. 80

5.4 Percentage of Types of Teacher Thinking in Feedback and No Feedback Interviews... 81

LIST OF FIGURES

FIGURE PAGE

3.1 Research Design.......... 36

Comparisons Between Feedback and No Feedback Interviews for Strategies 1, 2, and 3

5.1 for Teacher "A".......... 65
5.2 for Teacher "B".......... 66
5.3 for Teacher "C".......... 67
5.4 for Teacher "D".......... 68
5.5 for Teacher "E".......... 69
5.6 for Teacher "F".......... 70

Comparisons Between Feedback and No Feedback Interviews for Strategies 4, 5, and 6

5.7 for Teacher "A".......... 72
5.8 for Teacher "B".......... 73
5.9 for Teacher "C".......... 74
5.10 for Teacher "D".......... 75
5.11 for Teacher "E".......... 76
5.12 for Teacher "F".......... 77

CHAPTER 1

INTRODUCTION AND STATEMENT OF THE PROBLEM

Introduction

The debate about teacher supervision for evaluative or staff development purposes is one of the dominant issues in education today. Duckett (1985) in the preface to his text points out the belief that supervision of educational personnel is crucial if the quality of education is going to improve. Along with this belief is the increasing demand for accountability of individuals employed in public service areas. Most educators regard the improvement of instruction and accountability within education as being highly desirable. Duckett (1985) feels that despite this general agreement among educators, problems arise when the discussion turns to who will do the evaluating, what is the best form for the evaluation, what should be the content of such evaluations, and what is the best supervisory process to be used.

Educational theorists and researchers have been attempting to arrive at what is the most desirable method of approaching the problem of teacher accountability and evaluation. Different individuals have suggested various criteria that can be employed to assess the effectiveness of teachers, schools, and school districts as discussed by McNeil (1982). This is referred to as process-product research. Garmen (1982) in contrast, identifies other theorists and researchers who have concerned themselves not with the criteria, but with the processes of observation and supervision of school personnel.

The first phase of the study focused on the perceptions of Intern Teachers and Supervising Teachers concerning the desirability and frequency of use of various teaching strategies.

The second phase was concerned with the effects of supervisory feedback provided to teachers and the subsequent changes in teachers' verbalizing about the use of teaching strategies in their classrooms. This study also investigated the differences that exist among teachers in the degree to which they are able to verbalize about teaching strategies they use. A focus of this study is on whether a supervisory process can affect teachers' abilities to verbalize about the teaching process and the use of teaching strategies in their classrooms.

STATEMENT OF THE PROBLEM

The study had a twofold problem: (a) to compare the perceptions of Intern Teachers and Supervising Teachers on the desirability and frequency of use of various teaching strategies, and (b) to assess the ability of teachers to verbalize about teaching strategies which they use in their classrooms and determine whether the supervisory process can affect this ability.

RESEARCH QUESTIONS

1. What is the degree of agreement between Intern Teachers and Supervising Teachers about the importance and frequency of use of various teaching strategies?
2. To what degree is the ability of teachers to verbalize about the use of teaching strategies in the classroom affected when verbal probing is present or absent as teachers reflect on their teaching?
3. What are the dominant types of thoughts expressed by teachers when they are encouraged to reflect on their actions in their classrooms?
4. What vocabulary do teachers use in describing the various teaching strategies they employ in their classrooms?
5. In what does verbal probing by a mediator affect the content of teachers' verbalizations about the use of teaching strategies?
6. Are there common patterns of verbalizing among teachers as they reflect on their teaching in classrooms?
7. To what degree does the process of reflection on action increase teachers' perceived

awareness and reported use of effective teaching strategies?

DELIMITATIONS

The study was delimited in the following ways:

Phase I

1. The teachers participating in the study were employed by The Edmonton Public School District in the 1985 - 1986 school term. Twenty Intern Teachers and twenty Supervising Teachers who were identified by the central office of the school district became the population for Phase I of the study.
2. These teachers were asked to volunteer for the study and all but eight agreed to do so.

Phase II

3. The study was further delimited in Phase II to six Intern Teachers who were selected from the seventeen Intern Teachers responding to the survey instrument and agreeing to be included in the second phase of the research.
4. Six teaching strategies were selected for the second phase of the study based on the responses of the Intern Teachers in the first phase.

LIMITATIONS

The following limitations may influence the findings of this research project.

1. Since the survey instrument was administered to Intern Teachers and their Supervising Teachers, they may have consulted with each other and thus may have affected the results obtained.
2. Differences among the respondents in their ability to recall specific events and in their ability to bring meaning to what was recalled may be a limitation of this study.
3. The degree to which the research was obtrusive rather than unobtrusive in the classroom, the degree to which he was able to establish rapport, and the extent to which he was able to stimulate the teacher to verbalize during the interview may also be a source of

limitations for this study.

4. The researcher may not have been able to control his biases in the research and this may have had an influence on the findings.

SIGNIFICANCE OF THE STUDY

This two-phase study is significant in that it was designed to investigate areas of concern which appear to be directly related to each other in the areas of effective teaching, supervision, and teacher ability to verbalize about the teaching act. This exploratory and descriptive study focuses on the perceptions and verbal descriptions of teachers as they reflect on the teaching strategies they use in their classrooms. It is pointed out by Clark and Peterson (1986:292) that: "Teacher thinking . . . can be thought of as a set of moderating contextual factors that could influence substantially the outcomes of teacher effectiveness and curriculum effectiveness studies."

It is therefore important that research pay more attention to teacher thought processes with the purpose ". . . to increase out understanding of how and why the process of teaching looks and works as it does." (Clark and Peterson, 1986:256) In order to be able to bring about meaningful change in the practices employed by teachers and increase teacher effectiveness it is necessary to understand how and why teachers behave the way they do. Clark and Peterson (1986) report that the National Institute of Education felt that this area of inquiry was significant as the Institute for Research on Teaching was established in 1976 to encourage research in various areas of interest, and among these was teacher thought processes.

Grimmett (1981) feels this area of inquiry is significant because the,

> . . . cognitive information processing approach to teaching research is that what teachers do is affected by what they think. As, such, this approach is concerned with teacher planning, judgment, and decision making, the study of teacher thought processes - how they gather, organize, interpret, and evaluate information and seeks to bring about understanding of those processes unique to humans that guide and determine teacher behavior.

The present study is important as it is an effort to discover, understand, and to compare the perceptions of experienced Supervising Teachers and inexperienced Intern Teachers with respect to the desirability and use of specified teaching strategies. This study also examines the ability of teachers to verbalize about what they do in their classrooms and whether or not this process could enhance teachers' abilities in the area of self-evaluation. This research is concerned with teacher thoughts and how they provide meaning for what teachers do. Clark and Peterson (1985:255) indicate that this area of research is significant in that teacher ". . . behavior is substantially influenced and even determined by teachers' thought processes."

The present study is significant in that it examines the perceptions of two groups of teachers about the desirability and use of teaching strategies, and secondly, investigates the ability of teachers to develop and use conceptual language which may assist them to describe their actions as related to the teaching strategies they utilize. This study has practical significance in that it assesses whether stimulated recall and reflection on action can be used in training programs to encourage teachers to verbalize about their use of teaching strategies.

DEFINITIONS

In this study the following terms are used as defined below:

Content analysis:	a technique that is used to analyze objectively the content of written or verbal interaction. Holsti (1969) makes the point that content analysis may be quantitative or qualitative.
Preactive phase:	refers to a phase of teaching that takes place prior to instruction. It is planning for instruction.
Interactive phase:	refers to the phase of teaching during which the teacher is

interacting with students.

Reflective phase:	refers to a phase during which the teacher is involved in recalling specific occurrences, either past or present, and may attach some evaluation to them.
Projective phase:	refers to a phase of teacher thinking during which the teacher suggests what he or she might do in the future or projects possible outcomes.
Reflection on action:	teacher thinking which occurs immediately after the interaction phase.
Stimulus point:	an incident that occurred in the class is drawn to the teacher's attention and is used to encourage the teacher to expand his or her thinking in relation to that incident.
Stimulated recall:	a method used to help the subject to recall in greater detail the occurrences observed in the classroom. In this study stimulated recall was done by the researcher using extensive notes taken during observation.
Probing statements:	used by the researcher to stimulate the subject to explain their behavior and to encourage the subject to provide meaning for given occurrences.

Feedback statements:	these are statements which provide information to the interviewee about a teaching strategy being discussed.
Teaching strategies:	this concept is used throughout the report to include the skill behaviors, processes, and strategies used by teachers in the classroom.
Mediator:	a person acting in the role of a mentor, helping and guiding another through questioning techniques. The person can be in a position of a supervisor or administrator.

OVERVIEW OF THESIS

This introductory chapter includes the statement of the problem, the research questions, the limitations and delimitations, the significance of the study, and definitions of the terms used.

Chapter 2 presents a review of literature on the historical development of research on teaching, on the development of the scientific approach, and on the relationship between the scientific and artistic approaches. The second part of the literature review discusses evaluation, supervision, and teacher thinking. The discussion focuses attention on the relationship which exists between these areas in current educational practice.

Chapter 3 outlines the methodology employed in the study. A description is presented of how the participating teachers were selected for the two phases of this study. The chapter also includes a discussion of the methods used to analyze the data.

Chapter 4 presents the findings of the survey of Intern Teachers and Supervising Teachers and the comparisons between the perceptions of these two groups of respondents.

Chapter 5 reports on the analysis of the interview protocols on the types of teacher thinking used by Intern Teachers.

Chapter 6 presents the findings of the macro-analysis of the protocols to identify common patterns of teacher thinking.

Chapter 7 presents the summary, the conclusions and implications of the study, and identifies a number of recommendations for further research.

The Appendix section includes the survey instrument, the interview schedule, the list of teaching strategies identified by Project Quest, and the standard deviations for the Intern Teachers on each of the 54 survey instrument strategies.

CHAPTER 2

REVIEW OF RELATED LITERATURE

Introduction

The purpose of this chapter is to review the literature on effective teaching. The focus is primarily on the relationship between supervision for effective teaching and research on teacher effectiveness. The related subject areas discussed are: (a) the development of a scientific methodology for determining teacher effectiveness, and (b) the combined scientific and artistic views of determining teacher effectiveness. The discussion focuses on the process of supervision for effective teaching and establishes a relationship to teacher thinking.

HISTORICAL PERSPECTIVE

Development of Scientific Methodology

The focus of this discussion is on how the act of teaching has been researched. The historical development of educational research about teacher effectiveness is relevant here as it provides a framework within which this research was formulated. During the time period discussed there were many organizational changes in education as well as social and political changes which have influenced the public view of teachers and education. Consequently the main concern is on "research on teaching."

Gage (1972:16) defines research on teaching "... as the study of relationships between variables, at least one of which refers to a characteristic or behavior of a teacher." Gage (1978:14) defines teaching behavior as "... any activity on the part of one person intended to facilitate learning on the part of another." This definition of teacher behavior does not include a prescription for what is desirable teacher behavior. Gage (1978) goes on to describe the act of teaching as taking many forms and having many purposes which are dependent upon the circumstances in which it is found. The act of teaching can occur in an institutional setting or any other place where individuals communicate with each other.

Consequently the study of teacher effectiveness centers on examining the variables involved in the interaction between teachers, their clients, and the environment in which the act of teaching occurs. The environment includes social, organizational, economic, and political realities that influence educational organizations.

Karier (1982) refers to the changes which have occurred in education as being brought about by the evolving goals in education.

> . . . the goals of. . . education are a composite picture of the hopes, expectations, and possibilities and generation has with respect to the future generation. In this sense, education is a cultural renewal process in which the economic, social, religious, and cultural values of one age are systematically reconstituted for the next. As values shift so eventually does educational practice.
> (Karier, 1982)

At the turn of the century there was a massive influx of people from other countries and migration from rural to urban areas. This occurred because of the rapid growth and influence of the business and industrial community. The new urban residents had aspirations for their children and the economic community had needs which could be best met by the development of comprehensive public education systems. "The common school movement itself spurred on by the passions of nationalism and the social and economic instability resulting from immigration and industrialization. (Karier, 1982:3)

Consequently schooling changed from a private concern to a public concern in the United States. A similar movement occurred in Canada. The state began to take a more aggressive and dominant role in education. This increased participation led to an awareness about the quality of education and teaching.

Establishment of Personal Characteristic as Criteria of Effectiveness

Medley (1979) points out that,

> The very earliest research set out to describe the characteristics that differentiated more effective teachers from less effective ones. Techniques for the measurement of mental abilities, personality traits, attitudes, and similar factors were virtually nonexistent, and so early researchers asked pupils to describe effective teachers they had known.

There were many studies between 1900 and 1955 incorporating this strategy. The studies consistently arrived at some factors which were attributable to the "best thought of teachers." The six characteristics consistently appearing were:

1. teaching skill (clear explanations, use of examples, well organized, etc.)
2. cheerful, good natured, patient, not irritable
3. friendly, companionable, not aloof
4. interested in pupils, understand them
5. impartial - does not have "teacher's pet"
6. fair in grading and marking

(Medley, 1972:431)

The development of teacher characteristics, which were deemed suitable for teachers to possess, enabled supervisors to identify between who had the personal characteristics for a suitable teacher and who was lacking in these personal characteristics.

Development of Evaluative Checklists

The focus of research then turned from personal traits to characteristics which were considered to be effective and relevant to the act of teaching. The bulk of these studies occurred from 1920 to 1955. From these studies extensive lists of desired teacher attributes and behaviors were developed. The problem with these extensive lists was that ". . . there was nothing like perfect agreement on any of them - that is, there was little consensus even on the areas to be rated, let alone on the behaviors important in a given area." (Medley, 1972:433) Another problem was that they were developed and used by supervisors of teachers. The lists were primarily used for evaluative purposes and were inadequate in providing help for teachers to improve their performance. (Medley, 1972)

Consequently, the development and use of lists of personal characteristics, extensive lists of effective practices, and rating scales did little to define or clarify exactly what effective teachers were or what they did. These studies were based on opinions, feelings, and common sense. There were no observations and evaluations completed which determined whether any of these characteristics or personal traits had an effect on teaching and learning. (Gage, 1979: 13) Soar, et al. (1983:240) notes that until

> . . . the 1950's research on teaching focused on identifying those personal characteristics that seemed to distinquish effective from less effective teachers, not on identifying best practices. . . . the vast majority of these earlier studies used supervisors' ratings as the measure of teacher effectiveness. The validity of this criterion is so open to question . . . that no faith can be placed on the findings of such studies.

It was then determined that the research on teaching required that the efforts in the search for teacher and teaching effectiveness needed to be formalized. This led to the development of models for research and better methods to be employed in carrying out that research.

MODELS FOR EFFECTIVE TEACHING RESEARCH

The realization that concern about teacher personal characteristics did little to define teacher effectiveness led to the introduction of a second variable to the search for effective teaching strategies. Researchers started to be concerned with changes in the amount learned by students resulting from specific teaching practices. This was the beginning of the "process-product" approach to determining teacher effectiveness.

Coker, et al.,(1980) described this as "competency-based teacher effectiveness." They noted that ". . . the teacher can be held accountable, and can be required to demonstrate mastery of a specific set of competencies (i.e.., teaching behaviors), . . ."

Many systematic observation studies and reports have been undertaken since 1960 with many different methods of observation being developed. (Dunkin and Biddle, 1974) The work done by Dunkin and Biddle identified many desired strategies but the universal effects could not be clearly established. The research isolated the variables and situations were contrived to meet experimental requirements. Good (1980) notes that the lack of uniformity of classrooms and teaching styles found in these studies,

> . . . negate the popular misconception that there are universal forms of instruction that tend to work for all students across all subjects and in virtually any school context. Instructional problems vary from classroom to classroom, and there are not universal observational systems or formulas that can be used for describing and/or improving classroom instruction.
>
> (Good, 1980:5)

Once various strategies were identified the problem became one of how useful was this information. The notion of "criterion" became established and was to form the basis for a great deal of research on effective teaching. This was the "analytic approach." Along with this notion the idea of "ultimate criterion" was generated and as a result lists of criteria were developed. From the establishment of the criteria of teacher effectiveness, models were developed which helped formulate further research in the area of teacher effectiveness.

Two Models for the Study of Teaching

One of the most notable models was that of Mitzel proposed in 1957, the Generalized Schema for Research in Teacher Effectiveness. The Mitzel model focused on four variables which he felt needed consideration in the search for teacher effectiveness. These variables are described by Gage (1972:92) as:

Type I. Human characteristics on which teachers differ and which can be hypothesized to account, in part, for differences in teacher effectiveness.

Type II. Contingency factors which modify and influence the whole complex of behaviors than enter into the educational process. "If Type II variables play a commanding role in the achievement of educational objectives, then we will be required to replicate studies of teacher effectiveness in a great many situations..."

Type III. Classroom behaviors of teachers and pupils.

Type IV. Criteria or standards, consisting of "intermediate educational goals," i.e., the measurable outcomes at the end of a period of instruction as distinguished from "the ultimate criterion which might be phrased as 'a better world in which to live.'"

"It is through the intercession of his Type III variables that Mitzel says is the best hope for improvement in teacher effectiveness research." (Gage, 1972:92) Mitzel identified the classroom situations and the interaction between teachers and students as the area where most research on teaching should be concentrated. (Gage, 1972)

Dunkin and Biddle (1974) developed the "Model for the Study of Classroom Teaching". The Dunkin and Biddle model has been used to classify the research that had been done on teacher effectiveness. The model was developed by studying educational research and its major findings. The model was also intended to form the basis for further research on teaching. The model consists of four variable areas and explains the relationship they have to each other. These four sets of variables are:

1. Presage Variables which are the personal characteristics of teachers. These are described as formative experiences, training experiences, and teacher properties. These variables can be identified and can be used as a basis for recruitment and appointment decisions. An illustration of presage variable is traits, such as "authoritarian behavior" in the classroom, which can be traced back to the formative development of a teacher.

2. Context Variables are characteristics to which teachers must adjust and one which they have very little control. The variables in this area include pupil formative experiences, pupil properties, pupil social class, pupil abilities, school and community variations, and school size. As pointed out by Dunkin and Biddle, these variables can be identified by testing and research but very seldom can they be altered by what occurs in the teaching process.

3. Process Variables are all those things that occur in the interaction between teachers and pupils. What is important is the behavior of the teacher and how it affects students

learning. Also, the behavior of students and its impact on the behavior of teachers is important in the understanding of the act of teaching.

4. Product Variables are the outcomes of teaching which can involve immediate learning outcomes or "growth" on the part of the learner. Success in teaching can be evaluated by measurable changes in student learning or changes in attitude about subject matter. Contrasted against the immediate outcomes are the "long-term effects on pupils." These are difficult to identify. Even more difficult is demonstrating the relationship between the behavior and these long-term effects.

Dunkin and Biddle (1974:48) describe how the use of their model and the combination of variables in it can be utilized to formulate studies for educational research. They refer to six categories of research studies, which are:

1. the conceptualization and study of the teaching process,
2. the frequency of use of various teaching processes,
3. the relationship between context and processes in teaching,
4. the relationship between presage conditions and the teaching process,
5. the relationship among processes within the classroom, and
6. the relationship between teaching processes and the products of teaching.

Both models, that of Mitzel and that of Dunkin and Biddle, emphasize that the classroom and the interaction that takes place there are the best sources of information on effective teaching. The Mitzel model was the basis for many experimental studies and much of the research was done in contrived or laboratory situations. The Dunkin and Biddle model, however, required that the study of teaching be done in actual classrooms so to avoid some of the disadvantages of controlled situations. There was a realization that teaching is situation specific and that many of the differences found in classrooms could be controlled using statistical methods. For example, both of these models contributed to the use of more "scientific" methods in the study of teaching.

THE SCIENTIFIC APPROACH

The emphasis in teacher effectiveness research shifted to the classrooms where observations were made using scales with a determined high degree of reliability. Problems encountered with many of the observational studies. Emmer (1972), Medley (1972), and Adams (1972) all mentioned, (a) that there was a lack of uniformity in the studies, (b) that the language used is complex and led to subtle differences which made comparisons difficult, and (c) that some researchers were too quick to make generalizations about teaching.

The analytic or scientific approach was and is still widely used in educational research. The thrust of this research is that the complex act of teaching can be broken down into its component parts.

> What is important is the approach - the attempt to analyze teaching into limited, well defined, components that can be taught, practiced, evaluated, predicted, controlled, and understood in a way that has proven to be impossible for teaching viewed in the larger units that occur over a period of a day, a week, or a year.
> (Gage, 1972: 116)

The educational researcher was able to perform scientifically controlled experiments. He could control and measure what occurred in relationship to a particular variable, for a particular period of time, and in a particular setting. Church (1972) and Hughes (1972) were "... engaged in studies in which teachers were trained to manipulate particular behaviors in experimental lessons ...." (Nuthall and Church, 1972) Interaction systems and analysis systems were developed and used. The most notable and one of the most frequently used was the interaction analysis system developed by Ned Flanders in 1960. This system went under the name, The Flanders Interaction Analysis Categories.

The scientific basis for the observation and evaluation of teaching had been firmly established. As pointed out by Nuthall and Church (1972);

> We have always had a large number of different ideas about how teachers should behave, without any evidence that these ideas were right or wrong. Now we have a large number of observation systems for describing how teachers do behave

> without any evidence that the things we are observing are the right or the wrong things to observe.

Scientific observation and the identification of effective teaching strategies has led to the development of teaching models, microteaching in controlled settings, and minicourses. These have done much to generate knowledge about the identified desirable teaching strategies. The introduction of teacher training programs have identified strengths and weaknesses. The major strength was that teachers could become aware of what perceived effective practice should be. This is the process of educating teachers. A weakness is that ". . . microteaching trains teachers to perform in ways those who are running the program think is good. . . . Are we involved in a program which trains rather than educates?" (Perlberg, 1972) There is a danger, as pointed out, that teaching may become too mechanistic, too programmed, and too uniform to allow for differences and innovations to exist. The scientific approach was and is adopted by educators as a means to justify and reduce criticism of public education and to make the explanation of educational research easier.

> Today the better teacher effectiveness study can boast of objective low inference observation with documented and acceptable levels of interrater and time to time reliability. Quantitative indices of pupil achievement have replaced intuitive notions of good teaching, and the process-product paradigm has replaced anecdotal descriptions of the classroom.
>
> (Borich and Klinzing, 1984)

The acceptance of the scientific method of determining effective teaching practices was governed by:

> An underlying assumption was that the efficiency of teachers would be increased through the guidance of a supervisor who would translate aims of the school into terms which the teachers understood, gain teacher acceptance of the aims and objectives, help teachers adopt the curriculum in light of community and individual factors, analyze teaching, and judge the quality of instruction and the efficiency of the results.
>
> (McNeil, 1982:20)

Many educators have found that assessing an act as complicated as teaching with checklists and frequency counts as inadequate in fully describing effective teaching. Richer and more descriptive analysis was required. These researchers and theorists refer to this method of observing and evaluating teaching as the "artistic approach".

THE CONNECTION BETWEEN THE SCIENTIFIC AND ARTISTIC VIEWS OF TEACHER EFFECTIVENESS

The artistic view of teacher effectiveness is at the opposite end of the continuum from the scientific approach but does not exist in isolation from it. The artistic view of teacher effectiveness has been developing in the last five or six years even though the debate about whether teaching is an art or a science began much earlier. The theoretical framework for this method of observing teachers has been written about by Elliot Eisner.

The debate about whether teaching is an art or a science will not be presented here. It is agreed by almost every writer in the field that teaching is certainly a complex, multi-faceted area of human endeavor which requires in-depth investigation.

Eisner (1983) makes a connection between the scientific and artistic approaches. He states that:

> What I think scientific inquiry can provide in education are rules of thumb, not rules. Rules of thumb are schematics that make interpretation and judgment more acute. Scientific inquiry can provide frames of reference that can sophisticate our perceptions, not mechanisms that will control the behavior of students, teachers or administrators.

The artistic view does not dismiss the scientific view of teacher effectiveness from the observation and evaluation of teachers. The artistic viewer of education looks upon the scientific investigation of teaching as a method of supplying the tools, which are the strategies used by teachers.

Eisner (1982) defines the artistic approach as:

> . . . an approach to supervision that relies on the sensitivity, perceptivity, and knowledge of the supervisor as a way of appreciating the significant subleties occurring in the classroom, and that exploits the expressive, poetic, and often metaphorical potential of language to convey to teachers or to others whose decisions affect what goes on in schools, what has been observed. . . . The major aim is to improve the quality of educational life in school.

The difference between "looking and seeing" is crucial to the artistic view of effective teaching. Looking at a teacher and a classroom is the scientific approach. The practice ofteaching is broken into its various component parts and the observer uses rating scales and various observation instruments in order to make judgments about what is occurring in that classroom. The artistic approach believes in "seeing". What is the meaning of what is going on in that particular classroom. (Sergiovanni, 1982) Eisner (1983) points out that classroom situations are specific and scientific knowledge about teaching is general in nature. The teacher needs to know how to use the theoretical findings in research and be able to make a leap to the concrete level of the classroom. The craft of teaching is the use of specific strategy to meet specific needs at a specific time. The art of teaching is the desire and ability of teachers to be innovators. The craftsperson relies on what they already have, a built up repertoire of usable strategies. (Eisner, 1983)

The combination of the scientific and the artistic view of teacher effectiveness is to establish a relationship between "looking and seeing". Sergiovanni, (1982) makes the distinction that to look is to establish "brute data", which is what is actually happening in the classroom, what the observer actually is looking at occurring. The combination of the "theories" about effective teaching and "brute data" provide the base on which the artistic observer works. "Seeing" is the interpretation that is placed on the combination of the theory data and the brute data. The "seeing" is the giving of meaning to the act of teaching in the class.

Sergiovanni (1982:72) makes the connection between "brute data and sense data" in this way:

> Brute data collection strategies, therefore, have a role to play along with sense data strategies if a complete picture is sought. Further, since the social system features of classroom life are interdependent, evaluation needs to be viewed as dynamic. A change in classroom practices or in the organization of instruction, for example, influences the existing social structure and the shape and texture of the educational program. As these social system dimensions change, so do the meanings to be inferred from the brute facts of what is. . . . the pursuit of meaning is an exercise of little value without having established as well what is, and what ought to be.

The argument can be made that ". . . a scientific basis consists of knowledge of regular, nonchance relationships in the realm of events with which the practice is concerned. The relationship need not be perfect or even close to perfect." (Gage, 1978:2

Even though many teaching strategies have not been firmly advanced as being effective for every teacher in every situation they can still provide a good base for observing teacher behavior. As Gage (1978:22) puts it, "In short, our scientific basis must consist of established relationships between variables in teaching and learning." Stodolsky (1984) states that teacher effectiveness rests on the

> . . . assumption that the characteristics of "good" or effective teachers are known and recognizable. Effective teaching has been conceived as generally present or absent in a particular individual. . . stability and consistency of teacher behavior is assumed.

The relationship between the scientific and the artistic approach is in the use of the desired teaching strategies. What is important in the art of teaching is the decisions made by teachers. Costa and Garmston (1985) make this point in relation to decisions that teachers make about asking questions at particular times and at either high or low inference levels.

It is the understanding of the teacher decision making which enables the observer of teaching to evaluate that teacher's effectiveness. Sergiovanni (1984) describes this as "reflection of action." Eisner (1982) feels that in supervision what the ". . . situation means to the people who are in it and how the actions within the situation convey or create such meaning is the phenomena of interest."

EVALUATION, SUPERVISION, AND TEACHER THINKING

The problem of how to educate and re-educate teachers about the most effective practices is of prime concern if supervision for the improvement of instruction is going to be meaningful. There is a concern that the act of teaching has become too concerned with the process-product variables. The human quality may be lost with an over emphasis on the scientific methods employed in the investigation and training of teachers in the area of effective teaching. Zumwalt (1982) explains that the research on process-product variables can make teachers aware of the possible choices in instruction. He explains that the use of the strategies cannot be prescribed. The act of teaching is the making of choices between various strategies.

It is not only necessary that teachers use the effective strategies, but that they be aware of how and why they are using these strategies. The use of effective teaching strategies needs to become internalized by teachers so that they can function without concious thought being involved in the interactive phase of teaching.

The teacher is a processor of information, a decision maker, and a planner when involved in interaction with students. It is necessary for teachers to be aware that teaching is a ". . . process of constantly making choices about means and ends - choices that can be informed by process-product research, descriptive research, intuition, and one's own values." (Zumwalt, 1982:226)

There is controversy about whether the teacher is a technician or a professional. The debate will not be addressed here, however, an assumption is made that teachers should be evaluated as professionals. Soar, et al., (1985:240) notes that ". . . teachers should be evaluated as professionals, not as technicians, because teachers deal with complex problems."

The problem that is encountered is how to best meet the needs of the bureaucratic organization, the instructional leadership, the administrators, the teachers, and the clients of the process. The interest is to find means of:

> . . . making the teacher more accountable; for others,the interest is in helping teachers meet the constant and evolving demands of classroom teaching. Whatever the orientation, the underlying assumption is that better teachers would mean better schools.
>
> (Zumwalt, 1982:215)

It is the purpose of this second section of theliterature review to establish a relationship between evaluation, supervision, and teacher thinking.

TEACHER SELF-EVALUATION

Gitlin, et al. (1984) state that, "(m)odels of supervision that focus on prescriptions for practice, even if the prescriptions are helpful, do not really prepare teachers to consistently promote their own development through thoughtful reflection on their work." Gitlin, et al. (1984) recognized that if teachers are to be truly effective they must be more actively involved in the evaluation process. Educating teachers about strategies appears to be insufficient if meaningful change is going to occur in teaching practices. However, Smyth (1985) points out that the

> . . . inquiring mode is not part of the usual apparatus of most of us; indeed, there is a substantial body of literature advancing seemingly plausible reasons as to why teachers, in particular, are not avid inquirers into their own professional practice.

Sergiovanni (1984) notes that the ". . . teacher needs to be liberated from his or her own meaningfully. Of further significance is the realization that any teaching performance stands alone in its own right."

Gitlin, et al. (1984:52) notes that teacher self-evaluation is possible if a ". . . supervisory process like horizontal evaluation, that analyzes intents and their relationship to practice, provides a framework that teachers can apply to the examination of their work."

SUPERVISORY SKILLS IN EVALUATION

If the teacher is a poor self-evaluator, methods need to be examined where the supervisor can assist the supervisee to become liberated from aspects of his work to enable him to analyze and evaluate it effectively. The supervisor and the supervisee both have one goal in mind when beginning the process of supervision.

> Both the principal and teacher are aware that the purpose of the interview is for the improvement of instruction. The focus then moves from a totally judgmental process of the teacher to one in which both teacher and principal are engaged in mutual management process moving toward a particular goal - the improvement of instruction.
>
> (Sadler, 1982)

When the individuals are involved in this type of process, meaningful communication is important. It is important that a relationship be established between the participants. If a meaningful relationship does not exist and cannot be established, then teachers have to turn elsewhere for assistance or approval.

> Teachers consistently report that their primary source of help is other teachers, and they are critical of the amount and quality of assistance they receive from instructional leaders. When instructional supervisors lack skills directly related to the work of classroom teachers, teachers are forced to turn elsewhere for help. Consequently, supervision is frequently seen as unrelated to the improvement of instruction.
>
> (Alfonso, et al., 1984)

Alfonso, et al. (1984) go on to address the question of skills necessary for competency on the part of supervisors. They note that ". . . it is essential that they (supervisors) possess specialized knowledge and skills including the skills they seek to develop in teachers, . . . and the refinement of instruction requires supervisors who are both conceptually and technically strong." The supervisor must possess certain skills which are necessary for incumbency in certain positions. Alfonso, et al., (1984) identify three skill areas that a supervisor needs to be competent in. The three skill areas for supervisors are:

1. Technical Skills - the attainment of specialized knowledge and the ability to perform tasks inherent for that position.

2. Human Skills - the ability to work with and motivate others to enhance their performance.

3. Conceptual Skills - the ability to see relationships that are important to the organization.

It is important to note that the skills do not exist in isolation but are tied together by the context in which they are found. The supervisor needs to spend considerable time establishing an environment of open communication in which a process of human interaction can occur. Sergiovanni (1984:363) notes that teachers

> . . . need to be liberated as much as possible from the hierarchial constraints

> implicit in their role if they are to interact meaningfully. Efforts to separate teacher from teaching helps and so does the avoidance of unnecessary technical language in the process.

It is desirable that the participants be open and specific about the philosophy or agenda attached to the supervision of personnel. "A good statement of philosophy should provide us, either with the answers to operational questions or with the basis or criteria on which those answers should be developed." (Gephart, et al., 1979) Communication about the supervisory process and its intent is crucial so that understanding is achieved by all involved in the process.

The teacher needs to be involved in establishing the criteria a system of observation and evaluation. The goals and process need to be agreed upon for "synchronicity" which is ". . . when the participants work harmoniously toward achieving their own goals and the goals of the group." (Garmen, 1982)

Alfonso, et al. (1984) note that:

> When people share a sense of purpose, work cooperatively, and have a supportive management system, performance and productivity are enhanced. Human skills contribute to goal attainment while enhancing the school as a human system.

If the primary skills involved are human skills, it is desirable for the supervisor to adopt a style of working with teachers that is perceived by teachers to be nonthreatening. Costa and Garmston (1985) identify this role as that of "mediator." They state that the

> . . . supervisor, then is a crucial mediator of teachers'intelligent behavior. To stimulate the teachers' intelligent skills, the supervisor calls attention to discrepancies between intended and actual learning outcomes and poses problems intended to invite more than memory-type response.

Sergiovanni (1984:363) states that the supervisor of teachers needs to become a "mediator of teachers" because the

> . . . teacher is dominated by a highly technical language commanded by the supervisor by virtue of his or her authority role as evaluator (where the teacher is the object of the evaluation) or the information monopoly the supervisor possesses by controlling the method having collected the technical data.
>
> In self-defense, teachers seize upon technical language too, and when this happens the process of supervision is intellectualized away in a sea of verbiage with neither meaning nor change likely.
>
> The process most commonly referred to for the supervision of teaching

personnel, which incorporates the opportunity for the meaningful exchanges to occur between the supervisor and the supervisee is the 'Clinical Supervision Cycle.'

If the "Clinical Supervision Cycle" is used by supervisors to (a) help teachers to improve, (b) encourage verbal interaction between the two groups, and (c) bring about meaningful change, then the process needs to be understood by those involved in its use.

CLINICAL SUPERVISION

The process of clinical supervision will not be discussed in great depth here. The supervisory process of clinical supervision is included to highlight phases of the process which are particularly relevant to enhancing teachers' thinking processes which are reflected in their verbalizations about teaching.

Grimmett (1981:28) presents a model with five phases. The five phases of the clinical supervision cycle are:

1. the pre-observation conference,
2. the teaching and observation of teaching,
3. the analysis of instruction and observations,
4. the post-observation conference, and
5. the analysis of the data.

It is noted by Grimmett that in order for the model to be used effectively the supervisor of teachers needs to have a special kind of knowledge about the process and the ability to form relationships which will help make the process meaningful.

Knowledge Necessary for Supervisors

Grimmett (1981) indicates that using the cycle is very beneficial in establishing the "colleagueship" relationship which is necessary if supervisors are going to assist teachers to improve. Grimmett goes on to explain the knowledge that is necessary on the part of the supervisor to use the cycle in the most beneficial way. The knowledge areas, given by Grimmett (1981:29), as being required by supervisors are:

1. Commitments - (pre-conference and observation phase of the cycle) The supervisor and the supervisee reach agreement on what the commitment of the supervisee is to the act of teaching. The supervisee's general philosophy should be observable in the classroom. When the philosophy and practice of teachers agree, consonance is present.

2. Knowledge of Teacher Effects - (observation phase, analysis of observations, and the post-observation conference) The knowledge of the participants in the process can affect the way in which an individual sees or interprets what is observed. Supervisors need to ensure that they are observing or commenting on what was agreed to in the pre-observation conference.

3. Analysis of Teacher Competency - (post-mortem analysis) The supervisor and the supervisee appraise how valuable the process was and relate this to the research on effective teaching.

Grimmett (1981) emphasized that the general research on teaching encompasses the entire process. He also indicates that the supervisee has the same knowledge as the supervisor. He points out that if teachers, while interacting with students, become too involved with considering variables and alternatives for action, the flow of the lessons will be lost and they will not achieve desired outcomes. Effective practices need to become internalized by teachers.

Teacher Thoughts in the Clinical Supervision Cycle

Grimmett (1981:37) using the model "Clinical Supervision and Teacher Thought Process" explains the relationship between the clinical process, supervisory knowledge areas, and teacher thought processes. Teachers' thoughts are involved and relevant to all phases of the process of clinical supervision. Grimmett introduces a new phase of the clinical supervision process which he calls the "isotopex".

Isotopex

The isotopex is a retrospective interview situation between a supervisor and a supervisee which occurs immediately after the observation of teaching. The isotopex is a brief but critical exchange between the supervisor and the supervisee designed to isolate the "isomorphic configuration and topological features" of the lesson just observed.

During the exchange the teacher is the initiator and the supervisor the catalyst. It is the function of the catalyst to pose straight forward questions. The purpose of the process is for the supervisor to debrief the teacher about the lesson, by having the teacher explain from his or her point of view what went well and what didn't go well. "The isotopex is, by definition, a brief exchange in order to safeguard the discreteness of the observation and analysis phase of the cycle." (Grimmett, 1981:36) Grimmett further explains that the process serves two main purposes, which are:

1. to broaden the data base for the subsequent appraisal of teaching, and
2. to focus the analysis phase on those aspects of the lesson that are of concern to the teacher and are of critical importance to the evaluation of instructional effectiveness.

Grimmett (1981) explains that the inclusion of the"isotopex" aids supervisors in focusing their attention on what is desired from the clinical process by teachers. Grimmett (1981) feels that the inclusion of the "isotopex" will help in the establishment of the desired relationship between the supervisor and the supervisee.

> Successful supervision could therefore be described as cultivating a "colleagueship" relationship, through the use of the clinical cycle, where the teacher is free to attempt to improve instructional practice through innovation and the supervisor provides formative support and advice in assisting the innovation's implementation."
> (Grimmett, 1981:28)

Garman (1982) states that "(t)he 'we' of collegiability is articulated when we accept the richness of our common mythology and folklore of teaching." The aim of supervision and staff development is to help teachers make better decisions about instruction. In other words it should appeal to, captitalize on, and enhance teachers' thinking processes. (Costa and Garmston, 1985:73)

TEACHER THINKING

Bowles (1973) notes that ". . . decision making surfaces as the major skill in this concept of the teaching task and should rank first among the priorities for skill development in teacher training!" He identifies seven "decision points" in his model. The seven decision points are:

1. gathering data,
2. selecting the appropriate information,
3. dispersing the information,
4. evaluating the effects,
5. modifying instruction,
6. maintaining a learning climate, and
7. controlling student behavior.

"The effective teacher must not only refine the decision making skill so that synthesis occurs instantly, but must consciously remain open, so that adequate data are injested prior to synthesis." (Bowles, 1973) Teachers make decisions which are very complex and at very rapid pace while remaining open so decisions can be altered or new decisions are made on the basis of new data. The teacher does these things in relative isolation most of the time. The teacher is involved in the thinking about what has happened and what will be changed in his or her teaching practice.

> Being critical and acting in a reflexive way involves searching for meaning and patterns of thinking and acting, normally taken for granted in acquiring, classifying and organizing knowledge about ourselves. . . . In a word, we 'intellectualize' our experience,not in an academic sense, but in terms of developing theories about our practices, questioning and reflectingupon those theories, and formulating alternative possibilities to be tested in practice.
>
> (Smyth, 1985)

The teacher is an "information processor" who has to process a great deal of information. An understanding of the decisions teachers make and how they make decisions and their ability to verbalize about these decisions could assist a supervisor in the process of observing and evaluating instruction.

Gage (1978:80) describes this as the "Implicit Theory of Teaching." Gage describes the "Implicity Theory of Teaching" as taking the form of

> . . . a hierarchially structured set of beliefs about the proper ends and means of teaching, the characteristics of students, the modes of learning, and the way in which all of these interact to govern the teacher's behavior at any given moment. . . . teachers do not have time for deliberation or elaborate reasoning processes . . . they must fall back upon general principles and guidelines that they have more or less consiously adopted.

The "Implicit Theory of Teaching" suggests that the formulation of attitudes, beliefs, and philosophies adopted by teachers, is unique to each teacher. Changes in teaching behavior are dependent upon teachers' individual thinking processes as they are exposed to the environments in which they work.

The conflict between the organization and the teacher is perceived to exist at the level of thinking. Wise, et al., (1984) notes that, ". . . in the pure bureaucratic conception, teachers do not plan or inspect their work; they merely perform it." In opposition to the bureaucratic view, they describe the professional view of teachers, where teachers are involved in planning, evaluating, analyzing needs, assessing available resources, taking cognizance of the school district goals, and deciding on instructional processes, strategies, and skills. Clark and Yinger (1979) describe the teacher as a ". . . processor of clinical information, a decision maker, a planner, a diagnostician, and, a problem solver".

Thies-Sprinthall (1980:17) points out the need for concern about teacher thinking for the improvement of instruction by stating that theory strongly suggests,

> . . . the quality of how a person functions is essentially determined by the complexity of one's own cognitive structure. These assumptions are similar to those of Piaget (1970) in suggesting the importance of cognitive-developmental schemata. At higher, more complex stages of conceptual and moral development, an individual will function more complexly, abstractly, comprehensively, and emphatically.

The problems for the qualified supervisor of teachers is how to move teachers from simple to more abstract forms of thinking and to be able to recognize patterns of verbalizations given by teachers that are indicators of growth of the individuals cognitive processes. This is necessary if the quality of instruction is to improve.

Levels of Teacher Thinking

Grimmett and Housego (1983) describe four levels of conceptual functioning for teachers and places them in an organizational context. They have adopted their model from work done by Schroder and Harvey in 1963. Grimmett and Housego describe the four levels as:

Level I	- there is dependence of thought - there is undifferentiated, poorly integrated thought - the thought is dependent upon externally prescribed criteria - there are stable, unilateral conditions for supervision - the supervisor administers rewards and punishments
Level II	- there is a negative dependence - the thought patterns are similar to level one - there are strong tendencies to avoid externally prescribed criteria - there are high levels of negativism - supervisors are inconsistent - supervisors have excessively high expectations about performance - supervisees see themselves in a no win situation
Level III	- there is a conditional dependence of thought - conceptual functioning is more highly differentiated and integrated - persons see themselves more as causal agents in attaining rewards and punishments - there is a perception of mutual dependency - the individuals are influenced by the thoughts of others - not by rules - the supervisor gives feedback and directs experimentation
Level IV	- there is interdependence of thought - the supervisor actively encourages experimentation - there is an orientation toward information sharing - the individuals exhibit autonomous and interdependent thought patterns - the mastery of problems is important - the methods and approaches to problem solving are varied and adaptive.

Joyce and Showers (1980) identified at four levels of teacher cognitive functioning. The four levels they identified are:

1. Awareness
2. Concepts and Organized Knowledge
3. Principles and Skills
4. Application and Problem Solving

Joyce and Showers note that if teaching is going to improve then teachers must first become aware of what they are doing. The next step is to become familiar with the research about effective teaching. The third step is to practice and develop skills in the concious use of the strategies. Costa and Garmston (1985) state that if

> . . . a teacher can easily understand new information based on existing knowledge (assimilation), then there is no problem or challenge. If however, the teacher cannot assimilate the new information, that information must be processed, more information collected, and the ultimate resolution tested for its fit with the teacher's reality (accommodation).

Teachers, using the acquired skills in an unconcious way, need to be able to apply them to the classroom situations. This is necessary so they are more able to cope with the complex problems of teaching. Joyce and Showers (1980) notes that improvement in instruction, which will have an impact on education, can only occur after the fourth level has been reached by teachers.

> If new teaching behaviors, skills, competencies are to be passed on effectively to teachers, then it would appear that on-the-job coaching and support provided by the clinical supervisor could help teachers, who experiment with different instructional behavior not to be pressed back to existing patterns of teaching.
> (Grimmett, 1981:27)

If a desirable method to help teachers to achieve Level IV is through the process of clinical supervision, it would seem that supervisors need to be more aware of teacher thinking processes. Sadler (1982:7) notes that one

> . . . of the most important areas in the appraisal interview is that which focuses on the actual needs of the teacher; for, unless a principal knows what it is that motivates a teacher to move toward doing a better job, he cannot offer resources and support, or training.

Teachers, through a process of "reflection on action", can, with thoughtful supervisory help, be involved in analysis and evaluation of his or her own work.

Teacher Decision Making

Costa and Garmston (1985) indentified four phases of teacher decision making.

They are:

1. Planning (preactive stage)
2. Teaching (interactive stage)
3. Analyzing and Evaluating (reflective stage)
4. Apply to future situations (projective stage)

Costa and Garmston explain that the planning or preactive stage incorporates all those decisions that are made prior to instruction. Teachers are involed in designing the lesson, choosing materials, and planning the most suitable course of action.

The teacher or interactive stage incorporates all those decisions that teachers make while in their classrooms interacting with the students. The teacher is under considerable pressure to make decisions at a very rapid rate, perhaps not always having the time to process all information so that suitable decisions are made. Information is being processed from observation and recall and then action is being taken.

Analyzing and evaluating, the reflective stage, occurs after the interactive phase. It requires that the teacher reflect upon and judge his or her own performance recalling relevant information. Smyth (1985:9) notes that being

> . . . critical and acting in a reflexive way involves searching for meaning and patterns of thinking and acting, normally taken for granted in acquiring, classifying, and organizing knowledge about ourselves. Examining teaching this way frees us intellectually, not only from the domination of others, but from the domination by forces (we) do not understand or control.

The teacher then needs to apply this information to future situations, the projective stage. This is to correct problem areas or to carry on with techniques that are judged to be highly effective for that teacher. The quality of instruction should improve as the individual teacher is building a knowledge base of either successful or unsuccessful practices.

The main problem is how to stimulate the teacher to analyze and evaluate for themselves. As indicated earlier, teachers are a group of professionals that don't do this well. If the supervisor adopts the collegial, professional relationship, the possibility of teacher self-evaluation is more likely. Grimmett (1981) feels that the inclusion of the "isotopex" phase would enhance the process in the clinical supervision cycle and help increase a teacher's ability in the area of self-evaluation. Teacher thinking is summarized by Eisner (1983:9) as being what

> . . . skilled teachers require . . . to recognize dynamic patterns, to grasp the meaning, and the ingenuity to invent ways to respond to them. It requires the ability to both lose oneself in the act and at the same time maintain a subsidiary awareness of what one is doing. Simply a discrete set of skills ensures nothing.

SUMMARY

In summary, this chapter started with a discussion of the development of the scientific methodology to supervisory and evaluative practices. The discussion then reviewed the development of models for educational research and briefly discussed some of the significant findings as related to effective teaching practices in schools. It was from this process that various effective strategies have become known. It was noted that research is still proceeding in this area.

A brief review was done on the development of the artistic approach to supervision. A relationship between the artistic model, as described by Elliot Eisner, and the scientific model was established. The artistic approach attempts to get meaning from the act of teaching by using the scientific data, "brute data", as the basis in formulating the interpretation so that "meaning" is derived from the process.

The chapter also dealt with supervisory concerns in the process of evaluating and interpreting what is being done in classrooms. The literature on the subject appears to agree that if instruction is going to improve and students are going to gain, then, not only do teachers need to adjust and to learn new strategies but so must supervisors. "In short, teachers develop when supervisors are developing, and students learn when teachers are learning." (Grimmett and Housego, 1983)

Building the skills necessary for both supervisors and the supervisees requires that a special relationship be established between the two groups where neither is dominant.

It was also pointed out that both parties need to be knowledgeable about the vocabulary and processes involved in working to improve instruction.

The literature indicates that if teaching is to improve, then teachers need to learn to function at higher levels of cognitive ability. It has been noted that making teachers aware of the decisions they make in the classroom, and having them reflect about their teaching, can only enhance their learning. In this way they begin functioning at higher cognitive levels. The "assimilation" or "accommodation" of the new teaching strategies is also part of this cognitive process.

The literature reviewed has an important bearing on this study in that the study was an effort to understand more about teacher thinking processes and to discover what types of teacher thinking are most prevalent in the statements made by teachers. This study examined whether teacher thinking, as reflected in their verbalizations, changes as the intensity of supervisory feedback increases or decreases related to specific teaching strategies. The abilities of teachers to reflect on their actions and the patterns of thinking found in their verbalizations were also examined.

CHAPTER 3

METHODOLOGY OF THE STUDY

Introduction

This chapter describes the methodolgy used in the two phases of this descriptive and quasi-experimental study. The purposes and design of the survey instrument (Appendix A) are explained. The selection and method of approaching the participating teachers is discussed. The characteristics of the participating teachers are given in this chapter. The development of the Interview Schedule (Appendix B), is discussed and a rationale presented for the selection of the items that are used. The characteristics of the six Intern Teachers are provided as well as a description of the Interview Schedule and the procedures followed during the interviewing phase of this study. A brief description is given of the checks undertaken to ensure coder reliability. The two pilot tests are also described. The analysis of the data from the survey instrument and the interview protocols is discussed.

RESEARCH DESIGN

Phase 1 of the current study utilized a descriptive survey instrument. Phase 2 of this current study is described as quasi-experimental following a one group counterbalanced design. Figure 3.1 is an illustration of the pattern which was followed with the six Intern Teachers during the observation and interview phase of this study. The treatment in this research was providing and withholding feedback in order to determine whether the provision of feedback would affect the content of teacher verbalizations while discussing a specific teaching strategy. It was also the purpose of the research design to determine if a higher level of ability to verbalize about the specified strategies would be evident when the feedback was withheld as compared to the verbalizations that were given before feedback was provided.

Figure 3.1 RESEARCH DESIGN

One Group Counterbalanced Design

	Interview					
	1	2	3	4	5	6
Strategies 1, 2, 3	X_1O	X_1O	X_1O	X_2O	X_2O	X_2O
Strategies 4, 5, 6	X_2O	X_2O	X_2O	X_1O	X_1O	X_1O

O - Observation, X_1 - With Feedback, X_2 - No Feedback

SURVEY INSTRUMENT

The researcher designed a fifty-four item survey instrument that was used to determine the level of perceptual agreement among Intern Teachers and Supervising Teachers about the desirability and frequency of use of specified teaching strategies. Two responses were requested for each of the 54 items on the survey instrument. The instrument identified the participants' perceived level of acceptance of a stated strategy and enabled the researcher to make comparisons between the perceptions of experienced Supervising Teachers and inexperienced Intern Teachers. The rated importance of each of the specified strategies was also investigated. The survey instrument also provided informations which was useful in determining which strategies would be identified and used in the second phase of this study.

DESIGN AND CONSTRUCTION OF THE INSTRUMENT

The items appearing on the survey were primarily based on effective teaching research carried out by MacKay (1979). In the MacKay research, 25 of the 26 strategies which were identified as being either highly desirable or desirable for a teacher to possess were used to formulate items for the survey instrument and directly reflect that research. (see Appendix C) The items on the survey instrument were of three sorts. These are:

1. items taken from the MacKay report;
2. items that are a modification of the MacKay items;

and

3. items obtained from a project report completed by Ingraham (1983).

All 54 items on the survey instrument were classified by formulating a category into which a group of strategies could be categorized. This was done to facilitate analysis and discussion of the results.

The survey instrument was designed with each item being prefaced by, "The teacher should. . . ." Each teacher was asked to respond to each item from their personal point of view. They were asked to rate each strategy as to its desirability and to reflect on the frequency of that items use in their teaching. Both the Desirability Scale and the Frequency Scale had 5 possible response categories of the Likert-Scale format.

The survey instrument was pretested using graduate students at the University of Alberta. The survey instrument was also reviewed by an employee with the Edmonton Public School District who does extensive work with Intern Teachers providing inservice training on Effective Teaching. Following the pilot-test, suggested changes were incorporated into the final survey instrument.

SELECTION OF THE PARTICIPANTS

The study used Intern Teachers and their Supervising Teachers who were employed in The Edmonton Public School District in the 1985 - 1986 school term. Restrictions were placed on the selection of the participants as considerable demands were being placed on Intern Teachers for research purposes.

As a result the selection of the participants was not random. The Edmonton Public School District provided a list of individuals who could be used in this current study. These individuals were approached by sending them a letter along with the survey instrument inviting their participation. (Appendix A) A total of 20 Intern Teachers and their Supervising Teachers were approached to participate in Phase 1 of this current study.

Rationale for the Selection of Participants

Intern Teachers were selected for three reasons. It was felt that,

1. they had all just recently completed university training,
2. they were all having their first full time teaching experience, and
3. the Intern Teachers might have time during the day when they would teach and it was followed by a period of time that might be convenient for interviewing in Phase II of this study. This proved to be the case in three of the interview situations.

The Supervising Teachers were selected as they had either identified themselves or had been identified as having characteristics that would make them suitable supervisors of Intern Teachers. They also may have some more time available to them for the completion of the survey instrument.

Survey Instrument Returns

The initial request that was made of the 40 possible participants, brought 25 completed survey instruments. A follow-up letter along with another copy of the survey instrument was sent to the 15 teachers that did not respond to the initial request. A further 7 completed survey instruments were received. A total of 32 of a possible 40 survey instruments were completed and returned. An 80 percent return was considered acceptable and no further follow-ups were done.

Of the survey instruments returned, 17 were from Intern Teachers and 15 were from Supervising Teachers. A description of the Intern Teachers and the Supervising Teachers who completed the survey instrument is given in Table 3.1.

ANALYSIS OF THE SURVEY INSTRUMENT DATA

The survey instrument returns were analyzed to identify what differences in perceptions existed between Intern Teachers and Supervising Teachers. This was done by comparing the means of the responses on the Desirability and Frequency Scales for the two groups.

A two tailed analysis of variance was completed on the data obtained. The data were analyzed to see if there was a statistically significant difference in the reponses at the .05 and .01 level of significance. The strategies were clustered into groups where a relationship was seen to exist between the strategies. The Ingraham (1983) project was used to guide this process. The results are reported in Chapter 4.

The standard deviation for the Intern Teachers responses were also examined and served as the basis for determining the strategies that were used in the development of the Interview Schedule. The standard deviations are reported in Appendix D.

INTERVIEW DESIGN

The six strategies that form the basis for the interview schedule were arrived at by analyzing the standard deviations for each desirability response given by the Intern Teachers on the survey instrument. (Appendix D) The items selected for the interview also had to be observable strategies.

The Interview Schedule was pilot tested with an experienced Grade 6 teacher employed by The Edmonton Public School District. The teacher was observed and then interviewed 4 times. The impressions of the teacher about the relevance of the Interview Schedule items and the timing of the observations and interviews were discussed. The Interview Schedule was evaluated and some alterations were made as a result of the pilot process.

DESCRIPTION AND SELECTION OF THE SIX INTERN TEACHERS

The six Intern Teachers were approached as a result of their responding to the survey instrument. They were selected on the basis of a willingness to participate in the research. One Intern Teacher was approached on the basis of being a male teacher. The characteristics of the Intern Teachers participating in the observation - interview phase of this

Table 3.1 DESCRIPTION OF THE RESPONDENTS TO THE SURVEY INSTRUMENT

	Intern Teachers	Supervising Teachers
Teacher training	-mean of 4.5 years	-mean of 4.5 years
Teaching Experience	-at the time of the current research they had been in classrooms for 5 months. 2 had substitute taught the previous year.	-mean of 13.5 years
Sex	-14 females, 3 males	-10 females, 5 males
Grade Assignment	-0 - K 3 - 1 2 - 1/2 1 - 2 4 - 4 5 - 5 1 - 6 1 - Special Education	1 - K/1 2 - 1 2 - 2 1 - 3/4 2 - 4 1 - 4/5 1 - 4/5/6 2 - 5/6 1 - 5 1 - 6 1 - Special Education
	Total 17	Total 15
Classification	-16 Generalist Classroom Teachers 1 Special Education	-12 Generalist Classroom Teachers 1 Special Education 2 Classroom and Administration
Teacher Effectiveness Training	-15 are currently taking 2 are not taking it	-3 are currently taking 9 have taken it 3 have never taken

current study is as follows:

1. Of the Intern Teachers, 5 had 4 years of university training.
2. Of the Intern Teachers, 1 had 5 plus years of university training.
3. The distribution of grades being taught is, 2 in Grade 1, 2 in Grade 1-2 splits, 1 in a Grade 4 class, and 1 working with a group of 10 Grade 5 students.
4. One of the Intern Teachers had taught the previous year as a Substitute Teacher for The Edmonton Public School District.
5. Of the Intern Teachers 5 were participating in Effective Teacher Training with The Edmonton Public School District. 1 Intern Teacher had no experience with Teacher Effectiveness Training.

INTERVIEW SCHEDULE

The interview schedule was established to be mutually convenient for the Intern Teachers, the Supervising Teachers, and the researcher. The interviews were approximately 20 - 25 minutes in duration. Whenever possible the interviews were held one week apart. Each participant was observed and interviewed six times. The total number of observations and interviews done in this current research was 36. The classroom observations varied in length from 25 minutes to 1 hour. During the classroom observations the researcher made extensive notes paying particular attention to stimulus points related to the six items on the Interview Schedule.

INTERVIEW PROCEDURES

The interview consisted of 7 items. The first 6 items on the Interview Schedule were based on the comparison of the standard deviation of desirability ratings among the Intern Teachers. The seventh question is general and was asked at the end of each interview. During the final interview the participants were also asked, as part of Question 7, to express their feelings about some of the aspects of the current study and their participation in it.

During the first 3 interviews the participating teachers were encouraged to verbalize about the first 3 items on the Interview Schedule by the researcher responding to their comments with, probing remarks, feedback about the strategy, or by asking a question related to specific stimulus points noted while observing in the classrooms. Definitions of these responses is given in Chapter 1. The second 3 items during the interviews were simply asked as questions with no feedback from the interviewer. For the second set of 3 interviews the order of the questions was reversed. The last question of the Interview Schedule remained constant throughout and was used to evaluate the willingness on the part of the Intern Teacher to continue participating in the research and was used to obtain data relevant to Research Question 7.

All evaluative or judgmental statements about the quality of the teaching or the atmosphere in the classroom were avoided by the researcher. It was not the purpose of this research to evaluate the teachers' abilities or their effectiveness.

ANALYSIS OF THE PROTOCOLS

The analysis of Phase 2 of this exploratory and descriptive study is quantitative and qualitative. Much of the evaluation of the protocols is based in the interpretations of the researcher after examining the protocols. The protocols were also analyzed using criteria established by Costa and Garmstom (1985). Holsti (1969) recommends that when qualitative methods are used in content analysis that a quantitative methods also be employed to guide the higher inference analysis. The four coding categories used are given below and a brief description of each is presented. The findings of this method of analysis are reported in Chapter 5.

Code 1 - Planning (preactive phase) - These are verbalizations that either directly or indirectly relate to the preactive phase of the teaching process. These are thoughts which envision or describe an instructional technique that was to be used in the observed lesson. These thoughts could be related to curriculum, a strategy, or about how the teacher planned to deal with a particular problem.

Code 2 - Teaching (interactive phase) - These are verbalizations that are related to what the teacher actually did or said while interacting with the students in the classroom.

Code 3 - Analyzing and Evaluating (reflective phase) - These are verbalizations that indicate that the teacher can analyze what they did in the classroom. Some of these thoughts reflect on past occurrences or historical knowledge about what has happened in the past. The teacher is involved in self-evaluation about what was done in the classroom during the interactive phase. The teacher makes comparisons between intended and actual occurrances.

Code 4 - Applying (projective phase) - These verbalizations refer to what the teacher might do in the future. The teacher makes an hypothesis about an outcome if something different had been done. The teacher makes a commitment about changing strategies employed in the class.

CODER RELIABILITY

Eight graduate level students in attendance at the University of Alberta participated in establishing the coder reliability level of the current study. They were given brief instruction about each of the categories and the rules that were established for coding purposes. They were asked to code 50 lines of a protocol. The results were then compared to the codes assigned by the researcher. This was done by tabulating the total number of responses that were in agreement in relation to the total number of codes where agreement was possible.

$$\text{C.R.} = \frac{\text{Coding Agreements}}{\text{Possible Number of Agreements}}$$

A percentage of agreement was then determined. Lai (1979) states that a "rule of thumb" is that coder reliability is acceptable if it is at or exceeds 70 percent. The coder reliability for this current study was calulated to be 80 percent.

MACRO-ANALYSIS OF PROTOCOLS

The protocols contain a vast amount of information, directly and indirectly, related to this exploratory and descriptive study. It is for this reason that in order to deal with the complexity of the protocols and for the purposes of this study that the macro-analysis of the protocols would best serve the purposes of this study. The macro-analysis of the protocols is directly related to the stated research question, 4 - 7 as stated in Chapter 1.

The process that was established for this purpose was to go through the protocols strategy by strategy and trace any information that was deemed to be relevant to the Research Questions. The information from each teacher was then compared to the other teachers' verbalizations on the same item and then comparisons were made between the teachers to see if any patterns of verbalizations formed a pattern of teacher reflection on action. It was felt that this method would enable the researcher to notice similarities and differences throughout the process. The results of this analysis are given in Chapter 6.

SUMMARY

To summarize, the data collection for the present study was done in two parts. For the first phase, the survey instrument was completed by 17 Intern Teachers and 15 Supervising Teachers. The means of the Intern Teachers and the Supervising Teachers were analyzed to determine if there were differences in the perceptions for Intern Teachers and the Supervising Teachers concerning the desirability and use of 54 different teaching strategies. A two-tailed analysis of variance was done to determine if the differences were statistically significant. The standard deviations for Intern Teachers on each strategy on the Desirability Scale served as the basis for the selection of items on the Interview Schedule.

The second phase of the current research was concerned with the ability of teachers to verbalize about effective teaching strategies. Protocols of the interviews with the six Intern Teachers were transcribed and then analyzed using two methods. The first analysis used a coding method and was quantitative in nature. A coder reliability rating was established for this method. The results of this coding are reported in Chapter 5 along with a discussion of the results.

In the second analysis of the protocols, the researcher examined them for relevant information based on the indicated research questions. Comparisons were made on how the Intern Teachers responded to the six strategies in the different feedback situations. The results of the second method of analysis are reported in Chapter 6.

The conclusions, implications, and recommendations for the study were derived from the findings and are reported in Chapter 7.

CHAPTER 4

FINDINGS FROM THE SURVEY INSTRUMENT

Introduction

In this chapter the findings are reported to answer Research Question 1, which is:

1. What is the degree of agreement between Intern Teachers and Supervising Teachers about the desirability and frequency of use of various teaching strategies?

The findings are reported in 5 sections. The 54 items appearing on the survey instrument were categorized into clusters. The cluster categories chosen were:

1. Classroom Climate Strategies
2. Classroom Interaction Strategies
3. Student Management Strategies
4. Instructional Organization Strategies
5. Student Evaluation Strategies

Strategies which had a level which was statistically significant at the .05 and .01 level after the analysis of variance were noted in each of the clusters. As indicated on the tables, comparisons were made between Intern Teachers and Supervising Teachers both for (a) how desirable they perceived each of the strategies to be, and (b) how frequently they felt they used these strategies in their teaching.

Comparisons were made using three divisions of agreement. These divisions were established to facilitate discussion of the degree of agreement in perception between Intern Teachers and Supervising Teachers on the desirability and frequency of use of each stated strategy. The divisions of means selected are:

1. .00 - .10 (High Agreement)
2. .11 - .49 (Moderate Agreement)

3. .50 plus (Low Agreement)

For some of the strategies there were high levels of agreement between the two groups in terms of desirability or frequency. In some cases the level of agreement was moderate and in other cases the level of agreement was low between Intern Teachers and Supervising Teachers.

The responses to the 54 strategies within each of the five clusters were also compared to determine similarities and differences in rating by the Intern Teachers and the Supervising Teachers. The ratings were based on the responses given by the Intern Teachers on the Desirability Scale. Comparisons were made to determine the Supervising Teachers' rating of each strategy in relation to the Intern Teachers' rating on the Desirabilty and Frequency Scales.

CLASSROOM CLIMATE STRATEGIES

On Table 4.1 none of the thirteen strategies had a statistically significant difference after the analysis of variance at either the .05 or the .01 level of significance.

Table 4.1 shows that there were six strategies out of thirteen that had a high level of agreement on the Desirability Scale. There was two strategies on the Frequency Scale with a high level of agreement between Intern Teachers and Supervising Teachers. Strategies 3 and 19 had high levels of agreement on both scales, while strategies 34, 43, 44, and 51 had moderate levels of agreement on the Frequency Scale.

There were five strategies on the Desirability Scale which had moderate levels of agreement between Intern Teachers and Supervising Teachers. There were nine strategies with moderate levels of agreement on the Frequency Scale. Strategies 28, 32, 39, 40, and 48 were in the moderate agreement range on both the Desirability and Frequency Scales.

Strategies 6 and 47 both had mean differences in the low agreement range on both the Desirability and Frequency Scales.

Table 4.1
DIFFERENCES BETWEEN PERCEPTIONS OF INTERN TEACHERS AND SUPERVISING TEACHERS ON CLASSROOM CLIMATE STRATEGIES

Process, Strategy, or Skill The teacher should...	Desirability Intern	Desirability Teacher	Mean Diff.	Frequency Intern	Frequency Teacher	Mean Diff.
19. communicate on a level students are able to understand.	4.00	4.00	.00	4.00	4.00	.00
43. show that the teacher cares, accepts, and values students.	3.94	4.00	.06	3.88	4.00	.12
3. be aware of possible disruptions even when working with other students.	3.88	3.86	.02	3.88	3.86	.02
44. respond accurately to to obvious and less obvious feelings, meanings, and experiences of students.	3.83	3.93	.10	3.71	3.92	.21
40. be aware of what is going on in the entire class.	3.78	3.93	.15	3.82	4.00	.18
28. know the level of ability and attention span of each student.	3.67	3.79	.12	3.68	3.92	.24
51. provide immediate feedback on student work.	3.67	3.71	.04	3.71	3.85	.14
34. have high expectations for the achievement of all students in the class.	3.33	3.36	.03	3.47	3.92	.45
39. be able to attend to more than one issue at a time.	3.29	3.57	.28	3.31	3.61	.30
48. have expectations consistent with curriculum objectives.	3.17	3.50	.33	3.40	3.67	.27
32. concentrate on one task at a time.	3.17	2.92	.25	3.24	3.36	.12

Continued Over.

Part B - Table 4.1

Process, Strategy, or Skill The teacher should...	Desirability Intern	 Teacher	Mean Diff.	Frequency Intern	 Teacher	Mean Diff.
6. concern themselves mainly with the academic needs of the students.	2.24	1.71	.53	3.33	2.50	.83
47. treat all students the same regardless of ability.	2.12	1.42	.70	2.71	1.50	1.21

The higher mean score is underlined.
* Indicates Significant Difference at the .05 level.
** Indicates Significant Difference at the .01 level.
Desirability Scale
4 - Highly Desirable, 3 - Desirable, 2 - Somewhat Desirable, 1 - Neither Desirable nor Undesirable, 0 - Undesirable.
Frequency Scale
4 - Several Times a Day, 3 - Once a Day, 2 - Once a Week, 1 - Once a Month, 0 - Infrequently or Never

CLASSROOM INTERACTION STRATEGIES

On Table 4.2, Strategy 50 on the Frequency Scale showed a statistically significant difference between Intern Teachers and Supervising Teachers at the .05 level of significance. Strategy 27 on the Frequency Scale showed a statistically significant difference after the analysis of variance at the .01 level of significance.

Of the nineteen strategies in this category, four strategies had a high level of agreement on the Desirability Scale. On the Frequency Scale three strategies had a high level of agreement between Intern Teachers and Supervising Teachers. Strategies 10 and 31 were in the high agreement range on both of the scales. Strategies 22 and 26 had mean differences in the moderate range on the Frequency Scale. Strategy 35 on the Frequency Scale had a Desirability Scale score in the moderate agreement range.

Thirteen of the nineteen strategies had moderate levels of agreement between Intern Teachers and Supervising Teachers on the Desirability Scale. Twelve of the nineteen strategies had moderate levels of agreement on the Frequency Scale. Strategies 9, 11, 17, 20, 27, 30, 45, 52, and 53 appeared in the moderate agreement range on both the Desirability and Frequency Scales. Strategies 16 and 50 on the Desirability Scale were in the moderate range but the Frequency Scale score was in the low agreement range. Strategies 22, 26, and 35 were discussed above.

There are two strategies which had low levels of agreement on the Desirability Scale. There are four strategies on the Frequency Scale which had low levels of agreement. Strategies 4 and 37 had low level scores on both the Desirability and Frequency Scales. Strategies 16 and 50 on the Frequency Scale had Desirability Scale scores in the moderate level of agreement range between Intern Teachers and Supervising Teachers.

STUDENT MANAGEMENT STRATEGIES

Of the seven strategies on Table 4.3, strategy 1 on the Desirability Scale had a statistically significant difference after the analysis of variance at the .01 level of significance.

Table 4.2

DIFFERENCES BETWEEN PERCEPTIONS OF INTERN TEACHERS AND SUPERVISING TEACHERS ON CLASSROOM INTERACTION STRATEGIES

Process, Strategy, or Skill	Desirability		Mean Diff.	Frequency		Mean Diff.
The teacher should...	Intern	Teacher		Intern	Teacher	
10. move around the room and montior student work and demonstrate awareness of what all students are doing.	3.94	4.00	.06	4.00	4.00	.00
22. be clear, precise, and well organized when giving directions.	3.94	4.00	.06	3.71	3.85	.14
27. use a variety of instructional techniques to meet needs of students.	3.89	4.00	.11	3.47	3.92	.45**
35. use rephrasing, giving clues, or ask new questions to elicit a response.	3.89	3.71	.18	3.88	3.85	.03
31. use praise to reward outstanding work as well as encourage lower achieving students to do better.	3.83	3.85	.02	3.94	4.00	.06
52. refer new concepts to concepts already learned by students.	3.78	3.93	.15	3.41	3.77	.36
20. give feedback when it is convenient to do so.	3.78	3.71	.11	3.94	3.83	.11
26. use an experience, hands on approach for students.	3.78	3.71	.07	3.18	3.31	.13
36. use an appropriate mixture or high and low order questions.	3.67	3.79	.12	3.65	3.92	.27
30. make an appropriate selection of students to answer questions.	3.41	3.23	.18	3.75	3.45	.30

Continued over.

Part B - Table 4.2

Process, Strategy, or Skill	Desirability		Mean Diff.	Frequency		Mean Diff.
The teacher should...	Intern	Teacher		Intern	Teacher	
50. receive external supervision with the aim of improving instruction.	3.33	3.07	.26	2.71	1.71	1.00*
11. deviate from designed lesson plans when the opportunity arises.	3.11	2.69	.42	3.00	2.54	.46
9. let the flow of the lesson respond to unpredictable occurrances.	3.11	2.63	.48	3.06	2.64	.42
45. maintain the pace of the lesson.	3.06	3.46	.40	3.38	3.75	.37
16. receive supervision for for evaluative purposes.	2.88	3.08	.20	2.19	1.31	.88
53. follow designed lesson plans.	2.78	3.15	.37	3.35	3.46	.11
17. keep the giving of directions to a minimum.	2.65	3.00	.35	3.19	3.08	.11
37. use mild criticism to communicate expectations to more able students.	2.06	1.29	.77	2.13	1.31	.82
4. use lecture, supervised study, and factual questions as much as possible.	1.83	1.29	.54	2.44	1.91	.53

The higher mean score is underlined.
* Indicates Significant Difference at the .05 level.
** Indicates Significant Difference at the .01 level.
Desirability Scale
4 - Highly Desirable, 3 - Desirable, 2 - Somewhat Desirable, 1 - Neither Desirable nor Undesirable, 0 - Undesirable.
Frequency Scale
4 - Several Times a Day, 3 - Once a Day, 2 - Once a Week, 1 - Once a Month, 0 - Infrequently or Never.

Table 4.3
DIFFERENCES BETWEEN PERCEPTIONS OF INTERN TEACHERS AND SUPERVISING TEACHERS ON STUDENT MANAGEMENT STRATEGIES

Process, Strategy, or Skill	Desirability		Mean Diff.	Frequency		Mean Diff.
The teacher should...	Intern	Teacher		Intern	Teacher	
5. prevent misbehavior from continuing so other students are not affected.	3.94	4.00	.06	3.89	3.62	.27
8. handle disruptions in a low-key manner.	3.72	3.86	.14	3.94	3.79	.15
49. encourage students to be resonsible for having all necessary materials at their desks.	3.61	3.77	.16	3.82	3.67	.15
46. be able to obtain compliance from the students.	3.39	2.83	.56	3.75	3.25	.50
1. use a system of rules that allows students to attend to their needs.	3.29	3.86	.57**	3.69	4.00	.31
23. allow students to attend to their needs independently.	2.65	2.00	.65	3.94	4.00	.06
7. direct discipline at guilty students only.	2.65	3.36	.71	3.31	3.15	.16

The higher mean score is underlined.
* Indicates Significant Difference at the .05 level.
** Indicates Significant Difference at the .01 level.

Desirability Scale
4 - Highly Desirable, 3 - Desirable, 2 - Somewhat Desirable, 1 - Neither Desirable nor Undesirable, 0 - Undesirable.

Frequency Scale
4 - Several Times a Day, 3 - Once a Day, 2 - Once a Week, 1 - Once a Month, 0 - Infrequently or Never.

One of the seven strategies had a high level of agreement on the Desirability Scale. On the Frequency Scale one strategy had a high level of agreement between Intern Teachers and Supervising Teachers. Strategy 5 on the Desirability Scale had a Frequency Scale score in the moderate agreement range. Strategy 23 on the Frequency Scale had a Desirability Scale score in the low agreement range.

Strategies 8 and 49 had scores in the moderate level of agreement between Intern Teachers and Supervising Teachers on both the Desirability and Frequency Scales. Three strategies, 1, 5, and 7 had Frequency Scale scores in the moderate level of agreement range, but 1 and 7 had Desirability Scale scores in the low level of agreement range. Strategy 5 was discussed above.

There are four strategies with low levels of agreement on the Desirability Scale. One strategy appeared on the Frequency Scale in the low level of agreement range. Strategy 46 was in the low level of agreement on both the Desirability and Frequency Scales. The other strategies, 1, 7, and 23 were discussed above.

INSTRUCTIONAL ORGANIZATION STRATEGIES

Table 4.4 presents the ten strategies in this category. Strategy 13 on the Desirability Scale had a significant difference after the analysis of variance at the .05 level of significance. Strategy 12 had s statistically significant difference on the Frequency Scale at the .01 level of significance.

On the Desirability Scale four strategies had a high level of agreement between Intern Teachers and Supervising Teachers. On the Frequency Scale five strategies had a high level of agreement. Of these, strategies 24 and 38 were in the high agreement range on both scales. Strategies 2 and 42 on the Desirability Scale had Frequency Scale scores in the moderate agreement range. Strategies 15, 33, and 41 on the Frequency Scale had scores in the moderate agreement level on the Desirability Scale.

Table 4.4
DIFFERENCES BETWEEN PERCEPTIONS OF INTERN TEACHERS AND SUPERVISING TEACHERS ON INSTRUCTIONAL ORGANIZATION STRATEGIES

Process, Strategy, or Skill	Desirability		Mean Diff.	Frequency		Mean Diff.
The teacher should...	Intern	Teacher		Intern	Teacher	
24. make sure that all students are listening before beginning lesson.	3.94	4.00	.06	3.94	4.00	.06
13. organize the class to increase learning time.	3.72	4.00	.28*	3.24	3.77	.53
41. ensure that the lesson has a smooth flow.	3.61	3.86	.25	3.65	3.69	.04
2. provide interesting material for more able students when they have completed work.	3.61	3.71	.10	3.00	3.46	.46
15. use a standard signal to start the lesson.	3.61	3.50	.11	3.82	3.79	.03
12. explain the purpose of each lesson.	3.50	3.85	.35	3.24	3.85	.61**
38. use methods that meet the needs of the majority of students.	3.33	3.29	.04	2.41	2.50	.09
29. organize the class in small groups so students can share and help each other.	3.00	3.21	.21	2.53	3.15	.62
33. require more able students do more work.	2.17	2.00	.17	2.41	2.50	.09
42. organize the class in traditional row patterns.	1.28	1.29	.01	2.00	1.58	.42

The higher mean score is underlined.
* Indicates Significant Difference at the .05 level.
** Indicates Significant Difference at the .01 level.
Desirability Scale
4 - Highly Desirable, 3 - Desirable, 2 - Somewhat Desirable, 1 - Neither Desirable nor Undesirable, 0 - Undesirable.
Frequency Scale
4 - Several Times a Day, 3 - Once a Day, 2 - Once a Week, 1 - Once a Month, 0 - Infrequently or Never.

Six strategies on the Desirability Scale had scores in the moderate agreement range. There are two strategies on the Frequency Scale which had scores in the moderate level of agreement range. Strategies 12, 13, and 29 on the Desirability Scale had scores on the Frequency Scale which were in the low agreement range. Strategies 15, 33, and 41 on the Desirability Scale had high agreement scores on the Frequency Scale.

There were no strategies on the Desirability Scale with low agreement scores between Intern Teachers and Supervising Teachers. There were three strategies on the Frequency Scale that had a mean difference at the low level of agreement. The strategies were 12, 13, and 29 and were discussed above.

STUDENT EVALUATION STRATEGIES

Of the five student evaluation strategies on Table 4.5, strategy 14 on the Frequency Scale had a statistically signficant difference after the analysis of variance at the .05 level of significance.

On the Desirability Scale, one strategy had a high level of agreement between Intern Teachers and Supervising Teachers. On the Frequency Scale, two strategies had a high level of agreement. Strategy 18 was in the high agreement range on both scales. On the Frequency Scale, strategy 54 had a high level of agreement but on the Desirability Scale it had a low level of agreement.

Two of five strategies on the Desirability Scale had moderate levels of agreement between Intern Teachers and Supervising Teachers. One strategy on the Frequency Scale had a moderate level of agreement. Strategy 25 is in the moderate agreement range on both scales. Strategy 14 on the Desirability Scale was in the moderate range while on the Frequency Scale it was in the low range of agreement.

On the Desirability Scale, two strategies had a low level of agreement. Two strategies had low levels of agreement on the Frequency Scale. Strategy 21 has low levels of agreement on both scales. Strategies 54 and 14 were discussed above.

Table 4.5
DIFFERENCES BETWEEN PERCEPTIONS OF INTERN TEACHERS AND SUPERVISING TEACHERS ON STUDENT EVALUATION STRATEGIES

Process, Strategy, or Skill	Desirability		Mean Diff.	Frequency		Mean Diff.
The teacher should...	Intern	Teacher		Intern	Teacher	
18. use students daily work as most important for diagnostic and evaluative purposes.	3.56	3.64	.08	3.71	3.62	.09
25. use test results to motivate, guide, and direct student learning.	2.94	2.64	.30	2.47	2.23	.24
21. depend on self-developed mastery tests in making decisions about student learning.	2.94	2.36	.58	2.65	2.00	.65
14. use external standardized tests to determine whether material has been adequately covered.	2.06	2.21	.15	.82	1.46	.64*
54. feel that materials other than tests are of secondary importance.	1.11	.43	.68	1.40	1.33	.07

The higher mean score is underlined.

* Indicates Significant Difference at the .05 level.

** Indicates Significant Difference at the .01 level.

Desirability Scale

4 - Highly Desirable, 3 - Desirable, 2 - Somewhat Desirable, 1 - Neither Desirable nor Undesirable, 0 - Undesirable.

Frequency Scale

4 - Several Times a Day, 3 - Once a Day, 2 - Once a Week, 1 - Once a Month, 0 - Infrequently or Never.

LEVELS OF AGREEMENT

Table 4.6 shows the number of responses which fell into each category of mean difference on the Desirability Scale and the Frequency Scale.

Table 4.6 COMPARISONS OF LEVELS OF AGREEMENT BETWEEN INTERN TEACHERS AND SUPERVISING TEACHERS ON THE 54 STRATEGIES

SCALES	.00 - .10 High Agreement	.11 - .49 Moderate Agreement	.50 plus Low Agreement
Desirability	16	28	10
Frequency	13	28	13

There were 16 of the 54 strategies that had high levels of agreement on the Desirability Scale. On the Frequency Scale there were 13 strategies with high levels of agreement.

In the moderate range of agreement between the two groups, there were 28 strategies on the Desirability Scale and 28 strategies on the Frequency Scale.

Of the 54 strategies that had low levels of agreement, 10 strategies were on the Desirability Scale and 13 strategies were at the low level of agreement on the Frequency Scale.

The strategies which were rated as having a different levels of agreement, in comparing the perceptions of Intern Teachers and Supervising Teachers, on the Desirability Scale and Frequency Scale were noted. The number of incidences of agreement or disagreement between the two groups indicates that there existed differences in perceptions of the two groups on various teaching strategies.

Even though many of the strategies on the survey instrument indicated differences in perceptions between Intern Teachers and Supervising Teachers on the mean scores, the analysis of the variance did not generate many that were statistically different after the analysis of variance. Survey Instrument responses were received from 17 Intern Teachers and 15 Supervising Teachers. This small number of participants in this study may have influenced the number of strategies that had a statistically significant difference after the analysis of variance.

The analysis of the variance indicated that strategy 1 was significantly different between the two groups at the .01 level of significance. Strategy 13 had a significant difference after the analysis of variance at the .05 level of significance on the Desirability Scale.

On the Frequency Scale strategies 12 and 27 showed a statistically significant difference after the analysis of variance at the .01 level of significance. Strategies 14 and 50 had a statistically significant difference at the .05 level of significance.

STRATEGY RATINGS

Comparing the mean differences between the Intern Teachers and the Supervising Teachers on their responses to the items on the Survey Instrument it is noted that of the:

(i) "Classroom Climate Strategies", the Supervising Teachers rated eight of the thirteen strategies higher on the Desirability Scale and nine of the thirteen strategies higher on the Frequency Scale.

(ii) "Classroom Interaction Strategies", the Supervising Teachers rated ten of the nineteen strategies higher than did the Intern Teachers on the Desirability Scale and nine of the nineteen strategies higher on the Frequency Scale.

(iii) "Student Management Strategies", the Supervising Teachers rated five of the seven strategies higher on the Desirability Scale and two of the seven strategies higher on the Frequency Scale than did Intern Teachers.

(iv) "Instructional Organization Strategies", the Supervising Teachers rated seven of the ten strategies higher on the Desirability Scale and eight of the ten strategies higher on the Frequency Scale than did Intern Teachers.

(v) "Student Evaluation Strategies", the Supervising Teachers rated two of the five strategies higher on the Desirability Scale and one of the five strategies higher on the Frequency Scale than did Intern Teachers.

In most of the remaining cases, the Intern Teachers rated the strategies higher than did the Supervising Teachers.

The Supervising Teachers rated 33 of the 54 strategies higher on the Desirabiltiy Scale than did the Intern Teachers. On the Frequency Scale the Supervising Teachers rated 29 strategies of the 54 strategies higher than did the Intern Teachers. The Supervising Teachers scored more of the strategies higher on both the Desirability Scale and the Frequency Scale. The strategy cluster where this was most evident was in the "Instructional Organization Strategies". The reverse was the case in the "Student Evaluation Strategies" where the Intern Teachers scored more of the strategies higher than did the Supervising Teachers.

When examining the order in which the Intern Teachers and the Supervising Teachers rated the 54 strategies on the Desirability Scale and the Frequency Scale it is noted that:

(i) In four of the five clusters, the two groups rated the same strategy first on both the Desirability and Frequency Scales. In the "Student Management Strategies" the two groups rated Strategy 5, ". . . prevent misbehavior from continuing so other students are not affected", as being first on the Desirability Scale, however, both groups rated Strategy 23, ". . . allow students to attend to their needs independently" first on the Frequency Scale even though it was rated as being between "Somewhat Desirable and Desirable" on the Desirability Scale.

(ii) The Intern Teachers and the Supervising Teachers were in closer agreement when rating the 54 strategies on the Desirability Scale than on the Frequency Scale. For each of the scales, differences between the two groups in the average ratings for these strategies were small.

(iii) In four of the five strategy clusters, the Intern Teachers and the Supervising Teachers agreed on which strategy was least desirable in each category. On three of the five clusters of strategies the two groups agreed on the strategy they used least frequently.

SUMMARY

After the analysis of the Survey Instrument data, it was found that:

(i) For 16 of the 54 strategies there were high levels of agreement between Intern Teachers and Supervising Teachers on the Desirability Scale and for 13 strategies there were high levels of agreement on the Frequency Scale, for 28 strategies there were moderate levels of agreement on both scales, for 10 strategies there were low levels of agreement on the Desirability Scale and for 13 strategies there low levels of agreement on the Frequency Scale.

(ii) Supervising Teachers rated 33 of the 54 strategies higher than did the Intern Teachers on the Desirability Scale, and they rated 29 strategies higher on the Frequency Scale.

(iii) The analysis of variance revealed that there were six strategies for which there were statistically significant differences between the two groups either on the Desirability or the Frequency Scales.

(iv) Of the six strategies with a statistically significant difference, the Supervising Teachers rated five of the six strategies higher than the Intern Teachers on either the Desirability or Frequency Scales.

(v) The perceived strategy importance by one group was also deemed to be important by the other. Those strategies deemed to be unimportant by one group were deemed unimportant by the other. Also, the important strategies were reported as being used more frequently by both groups and those strategies that were rated low in importance were also rated low in terms of frequency of use.

It is inferred from the above findings that the more experienced teachers perceives various teaching strategies as being effective in a greater variety of environmental situations than does the less experienced teacher. This observation is probably reflected in the number of strategies which were given more positive ratings by the Supervising Teachers. The Intern Teachers were experiencing their first teaching assignment and consequently may not have perceived some strategies as being desirable for use in other teaching situations. The findings also lead to the conclusion that the more experienced Supervising Teachers probably have a more extensive repertoire of strategies they employ in their teaching.

The rankings for each of the 54 strategies that had been rated by the Supervising Teachers and the Intern Teachers were very similar. However, there were a number of exceptions with the most notable of these being Strategy 11, ". . . deviate from the designed lesson plan when the opportunity arises" and Strategy 9, ". . . let the flow of the lesson respond to unpredictable occurrences." Both of these strategies were given higher ratings by the Intern Teachers. The Intern Teachers' more positive ratings of these strategies may be due to recently completed university training or teacher effectiveness training being taken in the Edmonton Public School District at the time of the study.

It can be concluded that even though there were some differences in the mean scores of Supervising Teachers and Intern Teachers, the similarity in the rankings of their responses indicates that the differences in perceptions between the Intern Teachers and the Supervising Teachers were not great. The similarities and differences between the two groups were probably influenced by (1) differences in length of teaching experience, (2) differing environmental experiences while teaching, and (3) recency of contact with formal courses or training in teacher effectiveness.

CHAPTER 5

QUANTITATIVE ANALYSIS OF THE INTERVIEW PROTOCOLS

Introduction

In this chapter, the findings are reported to answer Research Questions 2 and 3, which are:

2. To what degree is the ability of teachers to verbalize about the use of teaching strategies in the classroom affected when verbal probing is present or absent as teachers reflect on their teaching?

3. What are the dominant types of thoughts expressed by teachers when they are encouraged to reflect on their actions in their classrooms?

The findings reported are based on the analysis of the interview protocols. The protocols were coded on a criteria established by Costa and Garmston (1985). The four categories used for the coding are:

1. Planning (preactive stage)
2. Teaching (interactive stage)
3. Analyzing and Evaluating (reflective stage)
4. Apply to Future Situations (projective stage)

The interviews were transcribed and the above mentioned categories were used to code the teacher comments. It is recognized that "lumping" was a factor in this study, in that broad rather than more specific sub-categories were used. Thus the four main categories were not subdivided. The purpose of the coding to identify trends, if any, in the thinking that occurred. The system used met this need. The raw scores for each strategy were compiled for the interviews and are reported in Figures 5.1 through 5.12.

In the first three interviews researcher feedback was given for Strategies 1, 2, and 3. In the first three interviews the Intern Teachers were not given any feedback nor were probing statements made by the researcher in relation to Strategies 4, 5, and 6. In the remaining three interviews researcher feedback was provided for Strategies 4, 5, and 6 but not for Strategies 1, 2, and 3.

Comparisons were made between feedback and no feedback situations. Comparisons were also made on the types of teacher thinking identified in the interview protocols.

STRATEGIES 1, 2, AND 3

In the first three interviews the six Intern Teachers were provided with feedback statements, probing remarks, and stimulus points for Strategies 1, 2, and 3 to encourage teachers to expand their thinking as related to a specific strategy. As shown in Figures 5.1 through 5.6 the ability of teachers to recall specific information about what occurred in the classrooms and to be able to analyze and evaluate what occurred relative to the strategies being discussed appears to have been greatly enhanced by the teachers receiving feedback from the researcher.

When researcher feedback was withheld for Strategies 1, 2, and 3 the ability of the Intern Teacher to verbalize about these strategies, revealed the following:

(i) For Code 1, planning thoughts, a decrease in teacher verbalizations occurred in thirteen of the possible eighteen interview situations. For two situations there was no increase nor decrease in the number of responses in this category. For three of the eighteen situations there was an increase in the amount of verbalizations when feedback was withheld.

(ii) For Code 2, teaching thoughts, a decrease in teacher verbalizations occurred in fifteen of the eighteen interview situations. For three of the eighteen situations there was an increase in the amount of verbalizations when feedback was withheld.

(iii) For Code 3, analyzing and evaluating thoughts, a decrease in teacher

Figure 5.1 COMPARISONS BETWEEN FEEDBACK AND NO FEEDBACK INTERVIEWS FOR TEACHER "A" ON STRATEGIES 1, 2, AND 3

Strategies 1, 2, and 3 had Researcher Feedback in Interviews 1, 2, and 3

Strategy 1. Mild Criticism

```
Code #
 1      ****4
        ^1
 2      ***************************************39
        ^^^^^^^^^^^^^^^^^^^^20
 3      ************************************************************60
        ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^38
 4      *1
        0
```

Strategy 2. Maintain the Pace of the Lesson

```
Code #
 1      ******************18
        ^^^^^^^^8
 2      **********************22
        ^^^^^^^^^^10
 3      ***********************************************47
        ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^34
 4      ****4
        ^^^^^^^^8
```

Strategy 3. Awareness of What is Occurring in the Classroom

```
Code #
 1      **2
        0
 2      ********************************32
        ^^^^^^^^^^^^^^14
 3      **********************************34
        ^^^^^^^^^^^^^^^^^^^19
 4      0
        ^^^3
```

---

* Number of responses given in Feedback Interviews
^ Number of responses given in No Feedback Interviews

Codes 1 - Planning Thoughts, 2 - Teaching Thoughts, 3 - Analysis and Evaluation Thoughts, 4 - Apply to Future Thoughts

Figure :COMPARISON BETWEEN FEEDBACK AND NO FEEDBACK INT.VIEWS FOR TEACHER "B" ON STRATEGIES 1, 2, AND 3

Strategies 1, 2nd 3 had Researcher Feedback in Interviews 1, 2, and 3

Strategy 1. Ml Criticism

```
Code #
 1      ****4
        ^1
 2      *************************************37
        ^^^^^^^^^^^^^^^^^^^^^^^^^25
 3      **************************************38
        ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^32
 4      *1
        ^1
```

Strategy 2. Maintain the Pace of the Lesson

```
Code #
 1      ************12
        ^^^^^^^^^^^^12
 2      *************************25
        ^^^^^^^^^9
 3      *******************19
        ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^43
 4      **2
        ^1
```

Strategy 3. Awareness of What is Occurring in the Classroom

```
Code #
 1      ****************16
        ^^^^^^^^^^10
 2      ************************************36
        ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^29
 3      ************************************************************60
        ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^31
 4      ***3
        ^^^3
```

* Number of responses given in Feedback Interviews
^ Number of responses given in No Feedback Interviews

Codes 1 - Planning Thoughts, 2 - Teaching Thoughts, 3 - Analysis and Evaluation Thoughts, 4 - Apply to Future Situations

Figure 5.3 COMPARISION BETWEEN FEEDBACK AND NO FEEDBACK INTERVIEWS FOR TEACHER "C" ON STRATEGIES 1, 2, AND 3

Strategies 1, 2, and 3 had Researcher Feedback in Interviews 1, 2, and 3.

Strategy 1. Mild Criticism

Code #
1 **2
0
2 **************************26
^^^^^^^^^^^^^^^^^^^^^^^^^^^^28
3 *********************************33
^^^^^^^^^^^^^^^^^^^^^^^23
4 **2
^1

Strategy 2. Maintain the Pace of the Lesson

Code #
1 ********8
^1
2 ********8
^^^^^^6
3 ********************20
^^^^^^^^^^^^^^14
4 ***3
^^^^4

Strategy 3. Awareness of What is Occurring in the Classroom

Code #
1 0
^^2
2 *****************************29
^^^^^^^^^^^^^^^^^^^^^^^^^^^^28
3 ****************16
^^^^^^^^8
4 *1
0

---

* Number of responses given in Feedback Interviews.
^ Number of responses given in No Feedback Interviews.

Codes 1 - Planning Thoughts, 2 - Teaching Thoughts, 3 - Analysis and Evaluation Thoughts, 4 - Apply to Future Situations

Figure 5.4 COMPARISONS BETWEEN FEEDBACK AND NO FEEDBACK INTERVIEWS FOR TEACHER "D" ON STRATEGIES 1, 2, AND 3

Strategies 1, 2, and 3 had Researcher Feedback in Interviews 1, 2, and 3.

Strategy 1. Mild Criticism

Code #	
1	0
	^^2
2	**************************26
	^^^^^^^^^^^^^^^^^^^^^21
3	**************************26
	^^^^^^^^^^^^^13
4	0
	^^^^4

Strategy 2. Maintain the Pace of the Lesson

Code #	
1	***********11
	^^^3
2	******************18
	^^^^^^^^^^^^^^^^^17
3	*****************17
	^^^^^^^^^^^^^^^^^^^^20
4	****4
	^^^3

Strategy 3. Awareness of What is Occurring in the Classroom

Code #	
1	******6
	0
2	************************24
	^^^^^^^^^^^^^^^^^^^^^21
3	*********************21
	^^^^^^^^8
4	0
	0

* Number of responses given in Feedback Interviews.
^ Number of responses given in No Feedback Interviews.

Codes 1 - Planning Thoughts, 2 - Teaching Thoughts, 3 - Analysis and Evaluating Thoughts, 4 - Apply to Future Situations.

Figure 5.5 COMPARISONS BETWEEN FEEDBACK AND NO FEEDBACK INTERVIEWS FOR TEACHER "E" ON STRATEGIES 1, 2, AND 3

Strategies 1, 2, and 3 had Researcher Feedback in Interviews 1, 2, and 3.

Strategy 1. Mild Criticism

```
Code #
 1     ***3
       ^^^3
 2     *************************************************49
       ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^61
 3     **************************************************50
       ^^^^^^^^^^^^^^^^^^^^^^^^^^26
 4     0
       ^^^^4
```

Strategy 2. Maintain the Pace of the Lesson.

```
Code #
 1     ******************************30
       ^1
 2     ****************16
       ^^^^^^^^^9
 3     *************************************37
       ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^30
 4     **2
       ^^^^^^^7
```

Strategy 3. Awareness of What is Occurring in the Classroom

```
Code #
 1     ***3
       ^^^^4
 2     ***********************23
       ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^46
 3     ***************************27
       ^^^^^^^^^^^^^^^^^^^^^^^23
 4     **2
       0
```

* Number of responses given in Feedback Interviews.
^ Number of responses given in No Feedback Interviews.

Codes 1 - Planning Thoughts, 2 - Teaching Thoughts, 3 - Analysis and Evaluation Thoughts, 4 - Apply to Future Situations

Figure 5.6 COMPARISONS BETWEEN FEEDBACK AND NO FEEDBACK INTERVIEWS FOR TEACHER "F" ON STRATEGIES 1, 2, AND 3

Strategies 1, 2, and 3 had Researcher Feedback in Interviews 1, 2, and 3.

Strategy 1. Mild Criticism

```
Code #
 1      *******7
        0
 2      ****************************************************52
        ^^^^^^^^^^^^^^^^^^^^^^^^^^^^28
 3      *****************************************************53
        ^^^^^^^^8
 4      0
        ^1
```

Strategy 2. Maintain the Pace of the Lesson.

```
Code #
 1      *********9
        0
 2      ************************************36
        ^^^^^^^^^^^^12
 3      *********************************************45
        ^^^^^^^^^^^^^^^^^^^19
 4      ****4
        ^^^^^5
```

Strategy 3. Awareness of What is Occurring in the Classroom

```
Code #
 1      *****5
        0
 2      **********************************************************58
        ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^45
 3      *********************21
        ^^^^^^^^^^^^^13
 4      ***3
        ^^^3
```

* Number of responses given in Feedback Interviews.
^ Number of responses given in No Feedback Interviews.

Codes 1 - Planning Thoughts, 2 - Teaching Thoughts, 3 - Analysis and Evaluation Thoughts, 4 - Apply to Future Situations.

verbalizations occurred in seventeen of the eighteen interview situations. For one of the eighteen interview situations there was an increase in the amount of verbalizations when the feedback was withheld.

(iv) For Code 4, apply to future situation thoughts, a decrease in teacher verbalizations occurred in six of the eighteen situations. For four of the eighteen situations there was no increase nor decrease in the number of teacher verbalizations. For eight of eighteen interview situations there was a small increase in the amount of verbalizations when the feedback was withheld by the researcher.

In summary, the abilities of the Intern Teachers to recall planning thoughts (Code 1) does not appear to have been greatly affected by researcher feedback being withheld. Providing feedback appears to enhance the teachers' abilities to verbalize more on "teaching", (Code 2) and "analyzing and evaluating thoughts", (Code 3) as there were considerable increases in these two categories. When feedback was withheld the teachers' abilities to verbalize their thoughts related to "apply to future situations", (Code 4) was not greatly affected.

STRATEGIES 4, 5, AND 6

In the second set of three interviews, the researcher provided the Intern Teachers with feedback, probing statements, and stimulus points for Strategies 4, 5, and 6. The results are summarized in Figures 5.7 through 5.12. Comparisons were made between the feedback and no feedback interviews on the number of verbalizations which were coded into each of the four thinking categories. The coding of the interview protocols revealed the following:

(i) For Code 1, planning thoughts, the number of verbalizations given by the six Intern Teachers increased in thirteen of the eighteen interview situations when feedback was provided on these three strategies. For three of the eighteen

Figure 5.7 COMPARISONS BETWEEN FEEDBACK AND NO FEEDBACK INTERVIEWS FOR TEACHER "A" ON STRATEGIES 4, ,5 AND 6

Strategies 4, ,5, and 6 had Researcher Feedback in Interviews 4, 5, and 6.

Strategy 4. Keeping Directions to a Minimum

```
Code #
 1      ^^^^^^^^8
        *****5
 2      ^^^^^^^^^^^^^^^^^^^^20
        **************14
 3      ^^^^^^^^^^^^^^^^^^^^^^^^^^^27
        ********************************32
 4      0
        0
```

Strategy 5. Directing Discipline at Guilty Students Only

```
Code #
 1      ^^2
        **2
 2      ^^^^^^^^^^^^12
        ********************************32
 3      ^^^^^^^^^^^^^^14
        *****************************************************53
 4      0
        0
```

Strategy 6. Asking Students to Respond to Questions

```
Code #
 1      ^1
        *1
 2      ^^^^^^^^^^^^^^^15
        *******************************31
 3      ^^^^^^^^^^^11
        ******************************30
 4      0
        **2
```

---

* Number of responses given in Feedback Interviews.
^ Number of responses given in No Feedback Interviews.

Codes 1 - Planning Thoughts, 2 - Teaching Thoughts, 3 - Analysis and Evaluation Thoughts, 4 - Apply to Future Thoughts

Figure 5.8 COMPARISONS BETWEEN FEEDBACK AND NO FEEDBACK INTERVIEWS FOR TEACHER "B" ON STRATEGIES 4, 5, AND 6

Strategies 4, 5, and 6 had Researcher Feedback in Interviews 4, 5, and 6.

Strategy 4. Keeping Directions to a Minimum

```
Code #
 1      ^^^3
        **********10
 2      ^^^^^^^^^^^^^^^^16
        *****************************29
 3      ^^^^^^^^^^^^^^^^^^^^^^^^^^^27
        *****************************************************I  I******72
 4      ^1
        0
```

Strategy 5. Directing Discipline at Guilty Students Only

```
Code #
 1      0
        ******6
 2      ^^^^^^^^^^^11
        ***************************************39
 3      ^^^^^^^^^^^^^^^^^^^19
        ************************************************************60
 4      0
        0
```

Strategy 6. Asking Students to Respond to Questions

```
Code #
 1      ^^^^^5
        ********8
 2      ^^^^^^^^^^^^^13
        *************************************37
 3      ^^^^^^^^^9
        **************************************38
 4      ^^2
        *1
```

---

* Number of responses given in Feedback Interviews.
^ Number of responses given in No Feedback Interviews.

Codes 1 - Planning Thoughts, 2 - Teaching Thoughts, 3 - Analysis and Evaluation Thoughts, 4 - Apply to Future Situations

Figure 5.9 COMPARISONS BETWEEN FEEDBACK AND NO FEEDBACK INTERVIEWS FOR TEACHER "C" ON STRATEGIES 4, 5, AND 6

Strategies 4, 5, and 6 had Researcher Feedback in Interviews 4, 5, and 6.

Strategy 4. Keeping Directions to a Minimum

```
Code #
 1      ^^^3
        ********8
 2      ^^^^^^^^^^^11
        *******************19
 3      ^^^^^^^^^^^^12
        *********************21
 4      ^^^3
        **********10
```

Strategy 5. Directing Discipline at Guilty Students Only

```
Code #
 1      ^1
        ***3
 2      ^^^^^^^^^^^^^^^^^^^19
        *****************************************41
 3      ^^^^^5
        ******************18
 4      ^^^3
        *1
```

Strategy 6. Asking Students to Respond to Questions

```
Code #
 1      ^^^3
        ****4
 2      ^^^^^^^7
        ****************************28
 3      ^^^^^^^7
        ****************16
 4      0
        ***3
```

---

* Number of responses given in Feedback Interviews.
^ Number of responses given in No Feedback Interviews.

Codes 1 - Planning Thoughts, 2 - Teaching Thoughts, 3 - Analysis and Evaluation Thoughts, 4 - Apply to Future Situations

Figure 5.10 COMPARISONS BETWEEN FEEDBACK AND NO FEEDBACK INTERVIEWS FOR TEACHER "D" ON STRATEGIES 4, 5, AND 6

Strategies 4, 5, and 6 had Researcher Feedback in Interviews 4, 5, and 6.

Strategy 4. Keeping Directions to a Minimum

```
Code #
 1      ^^^3
        ********8
 2      ^^^^^^^^^^10
        ****************************28
 3      ^^^^^^^^^^^11
        *****************************29
 4      0
        **2
```

Strategy 5. Directing Discipline at Guilty Students Only

```
Code #
 1      ^^^3
        0
 2      ^^^^^^^^^^^11
        *****************************29
 3      ^^^^^^^^8
        ********************************32
 4      ^^^3
        0
```

Strategy 6. Asking Students to Respond to Questions

```
Code #
 1      ^^^3
        **2
 2      ^^^^^^^^8
        *************************25
 3      ^^^^4
        **********10
 4      0
        ****4
```

---

* Number of responses given in Feedback Interviews.
^ Number of responses given in No Feedback Interviews.

Codes 1 - Planning Thoughts, 2 - Teaching Thoughts, 3 - Analysis and Evaluation Thoughts, 4 - Apply to Future Situations

Figure 5.11 COMPARISONS BETWEEN FEEDBACK AND NO FEEDBACK INTERVIEWS FOR TEACHER "E" ON STRATEGIES 4, 5, AND 6

Strategies 4, 5, and 6 had Researcher Feedback in Interviews 4, 5, and 6.

Strategy 4. Keeping Directions to a Minimum

```
Code #
 1      ^^^^^^^^^^^11
        ************12
 2      ^^^^^^^^^^^^12
        ***********************************************47
 3      ^^^^^^^^^^^^^^^^16
        ********************************************************56
 4      ^^2
        **********10
```

Strategy 5. Directing Discipline at Guilty Students Only

```
Code #
 1      ^^2
        *************13
 2      ^^^^^^^^^^^^^^^^^^^^20
        ***********************************************I  I**************79
 3      ^^^^^^^^^^10
        *****************************29
 4      0
        *1
```

Strategy 6. Asking Students to Respond to Questions

```
Code #
 1      ^^^^^^^^8
        **************14
 2      ^^^^^^^^^^^^^^^^16
        ******************************************42
 3      ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^29
        **********************22
 4      0
        *1
```

---

* Number of responses given in Feedback Interviews.
^ Number of responses given in No Feedback Interviews.

Codes 1 - Planning Thoughts, 2 - Teaching Thoughts, 3 - Analysis and Evaluation Thoughts, 4 - Apply to Future Situations

Figure 5.12 COMPARISONS BETWEEN FEEDBACK AND NO FEEDBACK INTERVIEWS FOR TEACHER "F" ON STRATEGIES 4, 5, AND 6

Strategies 4, 5, and 6 had Researcher Feedback in Interviews 4, 5, and 6.

Strategy 4. Keeping Directions to a Minimum

```
Code #
 1      ^^2
        ***********11
 2      ^^^^^^^^^^^^^^^^16
        **********************************34
 3      ^^^^^^^^^^^11
        **************************26
 4      0
        *****5
```

Strategy 5. Directing Discipline at Guilty Students Only

```
Code #
 1      0
        0
 2      ^^^^^^^^^^^^^^^^^^^^^^^^24
        *********************************************45
 3      ^^^^^^6
        ***************15
 4      0
        0
```

Strategy 6. Asking Students to Respond to Questions

```
Code #
 1      ^1
        ******6
 2      ^^^^^^^^^^^^^^^^^^^19
        ****************************28
 3      ^^^^^^^^^^10
        *********************21
 4      0
        *****5
```

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* Number of responses given in Feedback Interviews.

^ Number of responses given in No Feedback Interviews.

Codes 1 - Planning Thoughts, 2 - Teaching Thoughts, 3 - Analysis and Evaluation Thoughts, 4 - Apply to Future Situations

situations the number of verbalizations did not increase nor decrease when the feedback was added. For two of the eighteen situations there was a decrease in the number of verbalizations which were coded as planning thoughts when feedback was added by the researcher.

(ii) For Code 2, teaching thoughts, the number of verbalizations given by the six Intern Teachers increased in seventeen of the eighteen interview situations. For one of the eighteen situations there was a decrease in the number of verbalizations which were coded as "teaching thoughts" when feedback was used by the researcher.

(iii) For Code 3, analyzing and evaluating thoughts, the number of verbalizations given by the six Intern Teachers increased in seventeen of the eighteen interview situations. For one of the eighteen situations there was a decrease in the number of verbalizations that were coded as analyzing and evaluating thoughts when feedback was added by the researcher.

(iv) For Code 4, apply to future situation thoughts, the number of verbalizations increased in ten of the eighteen interview situations. For two of the eighteen interview situations the number of verbalizations neither increased nor decreased when feedback by the researcher was added to the interviews. For six of the eighteen situations there was a decrease in the number of Intern Teacher verbalizations about these strategies when feedback was added by the researcher.

In summary, the number of verbalizations that were given by the Intern Teachers in the discussion of Strategies 4, 5, and 6 greatly increased in the second set of three interviews where feedback, stimulus points, and probing remarks were added by the researcher. For codes 1, 2, and 3, the number of situations where there was an increase in the amount of verbalizations that were given by the six Intern Teachers was considerable. For code 4, "apply to future situations", there were increases in the number of thoughts, however the extent or the number of situations where the increase occurred was not as great as in the other three thinking categories.

TYPES OF TEACHER THOUGHTS

The number of teacher thoughts comparing feedback and no feedback responses in the interviews as related to each of the six strategies is shown in Table 5.1. A comparison was made to determine what percentages of the thoughts given in the interviews were a result of the feedback or lack of feedback. This was done to determine what effect providing feedback, probing statements and stimulus points have on the ability of teachers to verbalize about the teaching strategies used.

Table 5.1 - NUMBER OF TEACHER THOUGHTS IN FEEDBACK AND NO FEEDBACK INTERVIEWS

Strategies	1	2	3	4	5	6	total
Feedback	513	379	422	488	498	379	2,679
No Feedback	334	277	311	225	173	171	1,490
						TOTAL	4,169

Of the 4,169 thoughts expressed during in the 36 interviews, 2,679 or 64.3 percent were given in the feedback situations. Of the total number of thoughts expressed in the interviews, 1,490 or 35.7 percent were given by the six Intern Teachers when there was no feedback, probing statements, or stimulus by the researcher.

Table 5.2 presents these same data by percentage for each strategy.

Table 5.2 - PERCENTAGE CHANGES IN TEACHER VERBALIZATIONS BETWEEN FEEDBACK AND NO FEEDBACK INTERVIEWS

	Strategies					
	1	2	3	4	5	6
Interviews 1, 2, and 3	60	58	58	32	26	31
Interviews 4, 5, and 6	40	42	42	68	74	69

The percentage decrease in teacher verbalizations from feedback in the first three interviews for Strategies 1, 2, and 3 to no feedback in the second three interviews was not as dramatic as the percentage increase in verbalizations for Strategies 4, 5, and 6 from no feedback to feedback added during the second set of three interviews. For example, for Strategy 1 the difference between feedback and no feedback is 20 percent, whereas for strategy 4, where the order was reversed, the difference was 36 percent.

Table 5.3 compares the types of teacher thinking that was done for the feedback and no feedback situations combined. Approximately 9 percent of the verbalizations related to planning; nearly 45 percent related to teaching thoughts; about 44 percent related to analyzing and evaluating; and the remainder, related to application to future situations.

Table 5.3 PERCENTAGE OF TYPES OF TEACHER THINKING IN THE INTERVIEW PROTOCOLS

Code 1 (Planning)	8.6%
Code 2 (Teaching Thoughts)	44.8%
Code 3 (Analyzing and Evaluating)	43.6%
Code 4 (Apply to Future Situations)	3.0%

In summary, in terms of frequency of mention, the most prevalent types of thinking done by the Intern Teachers during the interviews were as follows: (a) Code 2, teaching thoughts (interaction thoughts), (b) Code 3, analyzing and evaluating (reflective thoughts), (c) Code 1, planning thoughts (preactive thoughts), and, (d) Code 4, apply to future situation or (projective thoughts).

A breakdown of each type of teacher thinking by feedback and no feedback situations is provided in Table 5.4.

Table 5.4 - PERCENTAGE OF TYPES OF TEACHER THINKING IN FEEDBACK AND NO FEEDBACK INTERVIEWS

	Code 1	Code 2	Code 3	Code 4
Feedback	70%	63%	65%	53%
No Feedback	30%	37%	35%	47%

As indicated in the table, the numbers of teacher thoughts expressed was higher in all four categories when feedback of various kinds was provided by the researcher. The greatest difference (40%) occurred in Code 1, planning thoughts, between feedback and no feedback situations. For Code 3, analyzing and evaluation thoughts, there was the second greatest difference (30%) between the feedback and no feedback interviews. For Code 2, teaching thoughts, the third highest difference (26%) between no feedback and the feedback situations was evident. The lowest difference (6%) between no feedback and feedback situations was found for Code 4, apply to future situations.

SUMMARY

In this chapter, comparisons were made between feedback and no feedback interviews related to four categories of teacher thinking. In the first three interviews researcher feedback was given for Strategies 1, 2, and 3 and feedback was withheld for Strategies 4, 5, and 6. Researcher feedback was given on Strategies 4, 5, and 6 in the remaining three interviews but was withheld for Strategies 1, 2, and 3. During all interviews the respondents were asked to reflect on each of the six strategies selected for the study.

First, changes which occurred as a result of the different feedback situations were noted. The situations where changes in teacher thinking did not conform to the pattern of increases or decreases in verbalizations were pointed out. Second, an analysis of the number of teacher thoughts related to each of the six strategies was presented. The percentages were established for each of the code categories used, comparisons between feedback and no feedback situations were made and discussed.

From the analysis of the data relevant to Research Question 2, it was found that:

(i) The interviews generated 4,169 coded teacher verbalizations, of which 64.3 percent were given by the respondents when feedback was being provided by the researcher. Of the total number of teacher thoughts, the remainder 35.7 percent were given when no feedback was being provided by the researcher.

(ii) The number of verbalizations given by the six Intern Teachers between the feedback and no feedback interviews, remained higher on Strategies (1) the use of mild criticism, (2) pace of the lesson, and (3) awareness of what is occurring in the classroom when the feedback was withdrawn than the initial verbalizations given on Strategies (4) keeping directions to a minimum, (5) directing discipline, and (6) asking students to respond to questions, before feedback was provided.

In response to Research Question 3 it was found that:

(iii) The types of teacher thinking all showed increases in the number of teacher verbalizations when the feedback was added, with Code 1, "planning thoughts" being the most affected, second was Code 3, "analyzing and evaluating thoughts", third, was Code 2, "teaching thoughts", and fourth was

Code 4, "apply to future situations."

(iv) The types of teacher thoughts which were verbalized more frequently as the teachers reflected on the actions were: (a) teaching thoughts (44.8%), (b) analyzing and evaluating thoughts (43.6%), (c) planning thoughts (8.6%), and (d) apply to future situation thoughts (3.0%).

CHAPTER 6

MACRO-ANALYSIS OF PROTOCOLS

Introduction

The second phase of the analysis of the interview protocols is reported in this chapter. The preceding chapter reports on the first phase which was primarily quantitative. The second phase, which is reported in this chapter was mainly qualitative and required that higher inferences be made in the analysis of the protocols.

The macro-analysis of the protocols was completed to answer the following research questions:

4. What vocabulary do teachers use in describing the various teaching strategies they employ in their classrooms?
5. In what ways does verbal probing by a mediator affect the content of teachers' verbalizations about the use of teaching strategies?
6. Are there common patterns of verbalizing among teachers as they reflect on their teaching in classrooms?
7. To what degree does the process of reflection on action increase teachers' perceived awareness and reported use of effective teaching strategies?

To obtain data for Research Questions 4, 5, and 6 the protocols were examined in four sections. The sections were:

1. The first, discusses strategies 1, 2, and 3, where feedback was provided to the six Intern Teachers in the first three interviews.
2. The second, discusses strategies 1, 2, and 3 where no feedback was provided by the researcher in the second set of three interviews.
3. The third, discusses strategies 4, 5, and 6 in the first three interviews where no feedback being provided by the researcher.

4. The fourth, discusses strategies 4, 5, and 6 where feedback was provided in the second set of three interviews.

Research question 7 is addressed using data obtained from the concluding remarks made by Intern Teachers in response to question 7 on the Interview Schedule, which was:

> How are you reacting to the process of being observed and then interviewed? Do you feel that the strategies being discussed are relevant to your teaching? Do you think the things that we are discussing have had any influence on your teaching?

The methods used in the macro-analysis of the protocols is more artistic than scientific. Comparisons between these two approaches were provided in Chapter 2. The coded analysis reported in Chapter 5, and research questions 4, 5, and were used to guide the content analysis for the relevant information in the interview protocols. This method was suggested by Holsti (1969) and Eisner (1983).

Teacher comments from the protocols are identified by teacher letter codes, the interview number, and then strategy number. For example: TB.2.4 identifies teacher B, interview 2, and strategy 4.

In the analysis of the interview protocols there were some notable similarities and differences in the way some of the six Intern Teachers responded to the strategies from the Interview Schedule. The feedback, probing remarks, and stimulus points referred to by the researcher also elicited different responses from the teachers. The extent of the statements made by the six Intern Teachers varied according to the amount of feedback that was given by the researcher and the content of the lesson observed. It is noted that some teaching strategies were more applicable to different lessons observed and therefore affected the extent of the teachers' statements related to those strategies.

FEEDBACK INTERVIEWS, STRATEGIES 1, 2, AND 3

In the first three interviews, researcher feedback, probing remarks, and stimulus points were used to encourage the respondents to expand their thinking for Strategy 1, the use of mild criticism, Strategy 2, pace of the lesson, and Strategy 3, awareness of what is occurring in the classroom.

Strategy 1 - The Use of Mild Criticism

In the interviews the teachers responded to the strategy of "mild criticism" in different ways. The initial responses of the six Intern Teachers ranged from not admitting that mild criticism could be used effectively with small children to an immediate response of acceptance of the strategy and admitting that it was being used in their classrooms. Three of the teachers wanted to put what they considered to be more attractive labels on the terminology: "constructive criticism", "helpful hints", and "guidance". They explained their choices as follows:

TA.1.1 - "... because to me constructive criticism is one thing, you're doing something, but doing it for a purpose."

TB.1.1 - "I don't know if I would call it criticism that I used, it was just helpful hints."

TC.1.1 - "I don't feel I actually criticized them ... I guided them."

Three teachers did accept the strategy as being effective. They were able to provide a rationale for its use in their classrooms.

TD.1.1 - "Criticism, I think sometimes I use it with the more able students because you know that they are able to do more things and they can sometimes handle criticism better than the others and it will have more affect on them."

TE.1.1 - "There are some students with whom I use it and there are some with whom I try not to use it with, I try to use praise more."

TF.1.1 - "I think the word mild is crucial. I do use it differently with different students."

The six Intern Teachers appeared to come to the realization that they did use "mild criticism" in their teaching as the interviews continued for the next two sessions. There was some expression, as the process continued, about what is "mild criticism." Some of the teachers were able to make the distinction at the end of the first three interviews, while others required the verbal probing by the researcher using stimulated recall and probing statements to be able to identify where it occurred in the lesson. The frequency of the probing varied with the teachers depending on what their initial attitude was to the strategy and the types of comments they were making.

TB.2.1 - "Criticism seems like such a negative sometimes. It has negative connotations with it so I wouldn't call it that, I would call it feedback."

TE.3.1 - "Until now, I didn't think about it, you don't realize until somebody points it out to you."

The teachers appeared to formulate their own definition about mild criticism and they used that definition as a basis for their discussion of the strategy. By the end of the third interview, all six teachers indicated that the strategy was used and they provided a rationale for incorporating it into their teaching.

Strategy 2 - Pace of the Lesson

The six Intern Teachers did not experience the same problem with acceptance of "pace" as an effective strategy as they did with "mild criticism." All of the six teachers readily admitted that the strategy of "pace" was important in teaching. Five of the six teachers started the remarks related to this strategy at the first interview with evaluative comments.

TA.1.2 - ". . . . might have been a little quick."

TB.1.2 - "I think the pace was effective."

TC.1.2 - "I feel that the pace of this lesson moved along quite quickly."

TE.1.2 - "This morning it felt like I rushed too much. I felt myself rushing and I tried to keep myself going."

TF.1.2 - "Well the pacing today could have been stepped up. It could have been a little faster."

The teachers recalled specific events in their classrooms that supported their initial evaluative statements. Some of the evaluative statements made by the teachers were related to how they felt the students were reacting to the pace of the lesson.

TA.2.2 - "I think it was too long for them to be sitting."

TB.3.2 - "I think my pace was effective because nobody made any verbal comments that it was too slow or too quick."

TD.3.2 - "I was giving enough time for them to work on it without them getting stuck or bored. . . . they were all working pretty well today and got their work done."

TE.3.2 - ". . . a lot of them were just dying to have somebody else read their stories, so that is why we went into the group activity."

The six teachers identified events in the classroom which affected the pace of the lesson, some requiring more mediator probing and stimulation than did others. When discussing "pace" teachers ellaborated on many of their comments by providing a rationale for what was done in the classrooms and referred to past occurrences or the planning of the lessons.

One of the teachers commented that the problem with the pace of the lesson was the fault of the teacher. There was an aspect of the lesson that was not adequately planned and it affected the pace of the rest of the lesson. This teacher also provided an alternative as to how the problem might be avoided the next time.

TF.2.2 - "I also have done that story with the other class so I didn't even really have to read it. Actually I did it better with the other class."

In summary, the teachers all accepted that the pace of the lesson is important to increase learning time by students. The six teachers gave an evaluative comment and provided a rationale for the occurrences that were discussed from the classroom. The teachers were inclined to relate any problems associated with pace to variables other than themselves. The teachers felt there were times when the pace of lessons was beyond the control of the teacher.

Strategy 3 - Awareness of What is Occurring in the Classroom

The six teachers all recognized that "being aware of what is occurring in the classroom" is important for any teacher. Some of the teachers did conceive this strategy to be related to other variables. Two of the teachers referred to the planning phase of teaching as being relevant when discussing awareness.

One of the teachers indicated that, not only does the teacher need to be aware of what the children are doing but the teacher also needs to be aware of:

TF.2.3 - "... what they know and need to know."

By having this knowledge the teacher felt it would moderate many of the other awareness problems that a teacher may encounter.

The teachers were not as inclined to evaluate what occurred in the classroom or their own behaviors in association to this strategy. One teacher noted the following:

TD.2.3 - "I got bogged down because they couldn't find the information."

There was evidence of "ego-enhancing" behavior by some of the respondents. If a problem of awareness was brought to the teacher's attention the tendency seemed to be to relate the problem to something or somebody other than themselves.

TF.3.3 - "The physical layout is an element of awareness."

The problem of physical layout and the limitations it placed upon the teacher to monitor the classroom was mentioned by two teachers. Two respondents felt that there was nothing they could do to correct the physical problems because of their status as Intern Teachers.

The teachers were all able to recall specific events from the classroom which demonstrated their awareness of what was occurring in the class. Some of the Intern Teachers required that the mediator provide considerable probing in order to bring occurrences of awareness to a point where it was felt that they were being fully recalled by the teachers. Some of the evaluative statements made by the Intern Teachers were:

TA.2.3 - "Well, I don't know if I catch everybody all of the time. But I think I catch those who want to wander around."

TB.1.3 - "I had anticipated who wasn't going to be able to cut along... and I caught them."

TF.2.3 - "You know I had my eyes all over the classroom. They weren't getting away with anything."

In summary, it was found that the statements made by the six respondents indicated varying degrees of acceptance of the three strategies being discussed. The teachers demonstrated a reluctance to accept "mild criticism" as desirable, but appeared to "accommodate" this strategy in the second and third interviews. The six teachers indicated greater acceptance of Strategies 2 and 3 which is described as "assimilation" in Chapter 2; however, they used "ego-enhancing" statements when discussing "pace of the lesson" and "awareness of what is occurring in the classroom."

NO FEEDBACK INTERVIEWS, STRATEGIES 1, 2, AND 3

During the second set of three interviews, no researcher feedback was provided to the respondents in relation to Strategy 1, mild criticism, Strategy 2, pace of the lesson, and Strategy 3, awareness of what is occurring in the classroom.

Strategy 1 - The Use of Mild Criticism

The transition from the feedback to the no feedback interviews generated some changes in the responses from the Intern Teachers about the use of mild criticism in their teaching. After some of the teachers had come to understand the use of mild criticism in the first three interviews, when the feedback was withdrawn some reverted to their initial response on the strategy or indicated a hesitency to accept it.

TA.4.1 - "I don't think I was criticizing because . . . I gave them clues."

TA.5.1 - "I have trouble answering this one, I think I have from day one."

TC.4.1 - "I tried to make it more positive than criticism."

TD.4.1 - "It wasn't anything serious today, I guess."

TE.6.1 - "Oh crap, I hate this one!"

Some of the Intern Teachers indicated that they did accept the use of the strategy in their teaching. There was also an indication in the interview protocols that a couple of the teachers may have been over sensitized to the strategy.

TE.4.1 - "I guess everything I did was criticizing."

TF.4.1 - "I know I did it two or three times in the class, let's see if I can think of them now.

The teachers who still appeared hesitant to accept the strategy of "mild criticism" were able to recall specific occurrences at which time they felt the strategy was used. The teachers, with no feedback being provided, limited their statements to one or two occurrences from the classroom that were related to the strategy.

The respondents were able to recall and provide a rationale as to why the strategy was used in particular lessons.

TB.6.1 - "I think I used mild criticism a lot today because they were more energetic than at some other times."

TB.6.1 - "I wanted to bring him back on track and you have to be kind of gentle. You don't want him to feel that what he said was stupid."

TC.6.1 - "Generally, I think mild criticism is effective when they have enough positive experiences. They have to have some feedback as to whether they were on target or not."

TD.6.1 - "I used a bit of mild criticism to let them know that they are capable of doing better and that what they have done is not up to standard."

In summary, there was a general reluctance by the Intern Teachers to totally accept the use of mild criticism in their teaching. The quantity of responses concerning the recollection of specific occurrences declined considerably from the first set of three interviews to the second. The teachers continued to indicate a desire to put other labels on the strategy, such as "positive," "negative," "clues," and "guiding." There were clear indications from two of the Intern Teachers that they were uncomfortable in discussing how the strategy was used in their teaching. All of the Intern Teachers were able, in the course of the second three interviews, to recall specific occurrences when the strategy was used in their teaching but the number or relevant statements was considerably lower than when the probing was provided by the mediator.

Strategy 2 - Maintaining the Pace of the Lesson

The six Intern Teachers all indicated that they had no difficulty with the acceptance of the strategy of "pace." In the second set of three interviews, with no feedback, the teachers gave evaluative comments related to the pace of the lesson and occurrences in the classroom.

TA.4.2 - "The pace at the end was shot, but that wasn't really my fault."

TB.5.2 - "I think the pace was appropriate, but I don't think the kids mood was fitting it."

TC.4.2 - "I was not particularly happy with the first part, it dragged on. . . so I thought the pace could have been a little bit better."

TC.6.2 - "I didn't think it went super well, as well as it could have."

TE.4.2 - "After thinking over the lesson, I thought that the pace last week was too fast and too unsettling. That was the kind of day I had."

TF.4.2 - "It was beginning to drag a little bit out there."

Five of the Intern Teachers indicated in their verbalizations that some aspects of pace were beyond their control. Some of the variables they indicated as having an influence on the pace were, (1) events sometimes arranged by the supervising teacher, (2) timetable planning with block times not long enough to accommodate certain activities, and (3) the emotional state of the children.

TA.5.2 - "Rather than listen, listen, listen - they would have been wild if I would have given them all those ideas in a row."

TB.5.2 - "I don't think their mood was suitable today."

TD.5.2 - "I didn't spend a lot of time talking about it, the kids get tired of it."

TE.5.2 - "We just worked in the time we had."

TF.5.2 - "They were getting a bit fidgety."

The quantity of the teacher verbalizations on the strategy of pace, when no feedback was being provided in the second set of three interviews was considerably lower than in the first three interviews. The teachers were able to evaluate the lesson, they were able to recall specific occurrences, and there were a few instances where they projected about how things might have been done differently or how they might do the same lesson differently. There remained throughout the first and second sets of interviews perceptions by the Intern Teachers that "pace of the lesson" is an important strategy to be employed in their teaching.

Strategy 3 - Awareness of What is Occurring in the Classroom

References were made by some of the Intern Teachers about variables in teaching which may or may not affect their ability to be aware of what is occurring in the classroom. These statements related to, (1) the physical layout of the classroom, (2) the type of planned activity either before, after, or during the lesson, and (3) the number of students in the classroom.

TA.4.3 - "I didn't have much of a chance once they moved around the room to see who was doing what and who was on the right track."

TA.5.3 - "The partitions really bother me, I like to see what is going on."

TE.4.3 - "We had 5 students away this morning, so that makes a big difference."

TE.5.3 - "Normally we would get this done in art class, but we don't get art tomorrow because of early dismissal so that kind of screws it up."

TF.4.3 - "Tuning in to how the kids are responding is so important."

There were some verbalizations by the Intern Teachers related to other strategies used in teaching. The majority of these statements were associated with having rules established which the teachers felt would eliminate many awareness problems. The teachers indicated that awareness was not only related to the interaction between the teacher and the students but also in the planning for that interaction.

TB.4.3 - "You prevent any serious misbehavior by having something for those children that finish so they have something to work on. You don't want half the class sitting there waiting quietly for the other half to finish up."

The six Intern Teachers were able to recall specific occurrences from the classrooms in the interviews related to "awareness." The number of the reflections was less than it was when the feedback was being provided. The teachers also provided less background information in the no feedback interviews. The Intern Teachers were not inclined to self-evaluate their performance in relation to this strategy. There were statements made by the teachers referring to variables of teaching that they felt were beyond their control and that these sometimes either positively or negatively influenced their ability to demonstrate awareness. There were statements in the protocols relating the strategy of being aware to planning, discipline, and monitoring student work.

Summarizing the responses of the six Intern Teachers to Strategies 1, 2, and 3 in the second set of three interviews it was found that five of the teachers reverted to their original reaction to Strategy 1, mild criticism. The teachers responses to Strategies 2 and 3 did not change a great deal, however, the number of relevant statements by the respondents was considerably lower than in the first three interviews.

Comparisons between Feedback and No Feedback Interviews on Strategies 1, 2 and 3

There were some similarities and differences in the verbal responses given by the six Intern Teachers while discussing the first three strategies in the feedback and then no feedback interviews.

Most of the teachers responded to Strategy 1, mild criticism by attempting to define the strategy in terms that had more appeal for them. As the interview sessions progressed the teachers became more aware, with probing by the mediator, that mild criticism was used in classroom teaching. They were able to recall specific occurrences when the strategy was employed and were able to provide a rationale for its use. This was described as "accommodation" in Chapter 2.

When the probing was withdrawn in the second set of interviews the teachers had the tendency to revert back to their initial reaction to the strategy. A couple of the teachers indicated that they disliked and were personally uncomfortable in talking about this strategy. Two of the teachers appeared to become over-sensitized to the use of mild criticism in their teaching and began to see things that did not apply to the strategy. The six teachers were able to recall specific occurrences related to the strategy but the number referred to was considerably lower than in the first set of interviews during which where probing was provided.

When discussing Strategy 2, maintaining the pace of the lesson, the six Intern Teachers all accepted that "pace" is an important strategy. This reaction continued throughout the six interviews. In both the feedback and no feedback interviews, the teachers were able to identify occurrences in the classroom related to pace, they were able to evaluate the pace, and some were inclined to suggest ways in which the lessons or the pace might have been changed to make the lesson progress more smoothly. The teachers were inclined in both types of interviews to use "ego-enhancing" methods, that is, they pointed to variables other than themselves when evaluating the pace of the lesson.

When verbalizing about Strategy 3, awareness of what is occurring in the classroom, the teachers all recognized that being aware is important for teaching. There was references by the teachers to other variables in teaching "ego-enhancing," which could affect a teacher's ability to be aware of what is occurring in the classroom.

A few of the teachers referred to other aspects of teaching which had an affect on the interactive phase. Some of the teachers indicated that one had to be aware in the planning phase as to how the children might react to certain activities. The teachers also felt that they had to be aware of the overt and covert behaviors and feelings of students. The six Intern Teachers were all able to recall specific occurrences in the classroom when they felt they demonstrated awareness of what was occurring.

NO FEEDBACK INTERVIEWS, STRATEGIES 4, 5, AND 6

In the first three interviews, researcher feedback, probing remarks, and stimulus points were not used to encourage the respondents to expand their thinking on Strategy 4, "keeping directions to a minimum," Strategy 5, "directing discipline at guilty students only," and Strategy 6, "asking the students to respond to questions."

Strategy 4 - Keeping Directions to a Minimum

The initial statements made by the six teachers related to the strategy of "keeping directions to a minimum" were either evaluative or the respondents were providing a rationale for the directions given in the lessons observed. None of the six teachers questioned whether the strategy was desirable or not desirable. There was some statements in the protocols that indicated that the strategy was not totally accepted by the teachers.

TA.1.4 - "I think they have to know what they are doing and I think you can be too brief with your directions and also with these kids, they are not always listening."

TC.1.4 - "But they have never done this before and they need more guidance."

Some of the statements made by the teachers were evaluative and provided a rationale at the same time. Some of these were:

TA.1.4 - "It really annoys me when you have to go over the directions again."

TA.2.4 - "I don't think my directions are ever too much to a minimum, I have a tendency to drag them out a bit."

TB.2.4 - "They were very directing because I don't think you can learn anything like this any other way."

TE.1.4 - "This is hard when you don't give me any ideas. Sometimes I think you can go in the opposite direction and give them too many directions and then you have to go back and clarify."

In the verbalizations, the teachers referred to rules and routines which were established in the classrooms which they felt helped with this strategy. One teacher referred to the strategy of having "a standard signal to begin a lesson" to help with classroom routines and behaviors.

The six teachers were able to recall accurately where they gave directions to the entire group of students. There was little reference given to how they gave directions when interacting with one student or a small group of students. Two teachers made references to other variables in teaching, for example, the ability of young children to listen and their inability to deal with many directions at one time. The comments made in the no feedback interviews on this strategy dealt with the verbalizations that teachers made about the directions that were given at the beginning of the lessons. There was little reference made to directions that were given after the interaction with the students had started.

Strategy 5 - Directing Discipline at Guilty Students Only

The six Intern Teachers all indicated an acceptance of the strategy of "directing discipline at guilty students only" in their teaching. The six respondents did recognize that there were times in their teaching when they disciplined the entire class. The six teachers were able to recall specific events related to when both types of discipline were employed in the lesson observed. The extent of the comments were limited with little to no background information being provided by the teacher. Some examples of the teachers' comments were:

TA.2.5 - "I don't think I did anything to the entire group."

TA.3.5 - "I don't know, I never seem to do it to the group."

TB.2.5 - "I did both. I referred to the noise level and I individually spoke to a few students who were fooling around and annoying each other."

TC.1.5 - "They have to know what is expected of them."

TD.1.5 - "I would rather deal with just the students involved. I'd rather be private than with the whole class."

TF.2.5 - "Strictly at individuals today and then only perhaps on two occasions with the group when we were moving from one place to the other."

Strategy 6 - Getting Students to Respond to Questions

The quantity of the verbalizations given by the six Intern Teachers related to the strategy of "asking the students to respond to questions" was limited. The teachers were able to recall only a few to no examples where the children were questioned in the course of the observed lesson. Only three or four comments were given by each of the teachers that related to the use of the strategy. Two of the teachers referred to the strategy of "giving clues to ellicit a response from the students" and some provided some background information about the class or a particular student. The bulk of the comments had to deal with the general feelings the teachers had related to the strategy itself. Some noted comments were:

TA.2.6 - "I know that you are not supposed to pick kids who are not paying attention, but I think it brings them back quick."

TC.1.6 - "Generally I try to ask a variety of students."

TD.1.6 - "I just try to get to as many kids as I can and I might pick 2 or 3 kids on one question to get different answers."

TD.3.6 - "I tried to pick everybody."

TE.1.6 - "I usually try to make sure that everyone gets a chance, if not in the lesson, then in the day."

TF.3.6 - "I thought that some were listening but didn't want to volunteer answers."

In summary, the analysis of the protocols on Strategies 4, 5, and 6 in no feedback situations revealed that the six Intern Teachers were inclined to only offer a minimum amount of information about what occurred in the classroom. The teachers were not inclined to self-evaluate their actions in the classrooms. The teachers indicated agreement with these strategies and it appeared that strategies 4, 5, and 6 were either "assimilated" or "accommodated" in their personal philosophy of teaching. When discussing Strategy 6, the teachers had all formulated what they considered to be the best strategy for use in their individual situations.

FEEDBACK INTERVIEWS, STRATEGIES 4, 5, AND 6

During the second set of three interviews, researcher feedback was provided to the respondents in relation to Strategy 4, "keeping directions to a minimum," Strategy 5, "directing discipline at guilty students only," and Strategy 6, "getting students to respond to questions."

Strategy 4 - Keeping Directions to a Minimum

The extent and the content of the teacher comments related to the strategy of "keeping directions to a minimum" increased in the feedback interviews. Some of the teachers initially expressed some concern that they were not saying anything new in relation to this strategy.

TB.4.4 - "Again it was just like all the others. It was specific for what we had to do."

TD.4.4 - "Pretty much the same as before. You always come on the days when we are doing routine work."

TE.4.4 - "I feel that I am not saying anything different."

The teachers were able to evaluate the directions and to relate their directions to specific occurrences from the lesson observed. The teachers did require some probing from the mediator in order to be able to discuss the strategy in more depth. Some examples of the teachers' evaluative comments were:

TA.5.4 - "Actually today I think the directions were short, perhaps too short."

TB.4.4 - "I felt that the students understood what and why we were doing the activity. So yes and no about keeping the directions to a minimum. I do think I gave sufficient directions because they caught on immediately."

TB.5.4 - "No the directions were not kept to a minimum today because of the nature of the lesson but I am of the philosophy that you should leave some of the learning to exploration."

TC.4.4 - "I think the directions were a bit too long. I wasn't really happy with the first part of the lesson."

TE.5.4 - "I don't think I went overboard. I gave the directions that were necessary for them to complete the assignment."

TF.6.4 - "When we started on it, I found that the directions were too long, the first one where they were supposed to . . . they had forgotten. . . so I found that I had to stop and put it on the board and get them going."

Some of the teachers indicated that they take clues from the students about whether the directions need to be expanded or left as initially given. There were references as to how the directions were given to the students. A few of the teachers referred to the age and ability level of students as being a controlling factor, a few of the teachers made the reference to the differences between written and oral directions. Five of the teachers evaluated the quality of the directions given by referring to the quality of the work produced by the students.

Strategy 5 - Directing Discipline at Guilty Students Only

The quantity of the comments made related to the strategy of directing discipline at guilty students only increased considerably from the no feedback to the feedback interviews. The teachers were more able and more inclined to recall specific occurrences from the classroom and were more inclined to provide background information related to the use of this strategy when feedback was provided.

The six teachers were not inclined to evaluate their own performance in the use of this strategy. Four teachers were able to recall where the strategy was and was not utilized with single students or the entire class. Some comments made were:

TA.5.5 - "I assumed that they were both guilty, so I sent them both out."

TB.5.5 - "I did a lot of disciplining by just calling our their names or just by looking at them. . . . It bothers me when they are whistling or tapping their pencils if I am trying to speak. There has to be a reason behind it. I think they need to know that you are human and there are things that bother you."

TE.5.5 - "Mostly this morning it was people trying to interrupt me."

TF.4.5 - "I think it was one of the first times with this group that I didn't have to discipline the entire group."

There were references made by two of the teachers to influences outside or inside the classroom over which they felt they had no control and which were affecting how the students in the class were disciplined. This strategy, used by the teachers, is defined as "ego-enhancing." The variables referred to were; (1) the weather, (2) the home environment of a child, (3) the general emotional state of the children, and (4) the type of lesson being experienced by the children.

In summary, the six Intern Teachers were more able to recall specific events related to the strategy of disciplining guilty students only when probing was provided by the researcher. The majority of the teachers indicated agreement with the strategy but also indicated that there were times when the entire class was disciplined for various reasons. The teachers were not inclined to give comments related to their own performance in relation to the use of this strategy. The teachers were inclined to provide a rationale as to why certain behaviors were exhibited by them while interacting with the students. The teachers also related discipline problems to inside and outside the classroom variables.

Strategy 6 - Asking Students to Respond to Questions

During the feedback interviews the six Intern Teachers were able to ellaborate in much more detail on the strategies they employ in asking students to respond to questions. The teachers were able to recall specific occurrences during the lesson when they were involved in questioning with the students. Some of the teachers comments were evaluative about their own performance in relation to the use of this strategy. Some of their comments were:

TA.4.6 - "I was trying to pick the ones I don't usually ask today."

TB.5.6 - "I was getting frustrated with them because they were getting kinda antsy and not giving the correct answers."

TE.4.6 - "I try not to seem like I am rushing through their work to get to somebody else. That is one I haven't found a cure for."

TF.5.6 - "I was basically going with the students who had their hands up with an answer, and tried to make sure that I didn't ask the same people over and over again."

Some of the teachers indicated that this strategy was used for discipline purposes or to keep children on task for longer periods of time. These teachers also recognized that these are not the main purposes for using the strategy. The teachers indicated that they had formulated a philosophy about how to go about asking students to respond to questions. There were a few indications that routines had been established for discussions and responding to questions. The teachers also indicated that they do deviate from these routines when they feel that it is necessary to do so, because, (1) particular children were not paying attention, (2) because the teachers want to check for understanding, or (3) the teachers wanted to maximize class participation in a certain aspects of the lessons. The most common method used by the teachers was to have students raise their hands to volunteer answers.

When researcher feedback was used by the researcher with Strategies 4, 5, and 6 the number of relevant statements increased. The teachers were not as inclined to be involved in self-evaluation with these three strategies as with Strategies 1, 2, and 3. The teachers appear to have assimilated these strategies into their philosophy by the statements that they initially made about them, however, when probing was provided in the second three interviews the teachers did realize that they did discipline the entire class and they referred to variables over which they felt they had little control. The six teachers had formulated a strategy on asking students to respond to questions, only one teacher indicated that experimentation was being done on this strategy.

Comparison between No Feedback to Feedback Interviews on Strategies 4, 5, and 6

The comments made by the six Intern Teachers in the initial no feedback interviews were limited in related to Strategies 4, 5, and 6. In the first three interviews the teachers were inclined to offer a minimum amount of information about what was done in the classroom. In most of the no feedback interviews, the teachers only recalled one or two specific occurrences related to the use of Strategies 4, 5, and 6.

When the feedback was provided in the second set of three interviews the teachers were more willing, with probing, to provide information about how and why they did certain things and were more inclined to offer some background information as to how and why the strategy was employed in their teaching. The teachers were not as inclined to be involved in self- evaluation with Strategies 4, 5, and 6 as they were with Strategies 1, 2, and 3. The teachers did do more self-evaluation when the probing was done by the researcher particularly in relation to Strategy 6, but it was not a dramatic increase and didn't apply to all of the teachers.

When discussing Strategy 5, "disciplining the quilty students only," some of the teachers referred to inside and outside influences which had a influence on the way the strategy was employed in that particular lesson.

The teachers were able to recall specifics and provide a rationale in both the no feedback and feedback interviews. The teachers did expand their thinking considerably in the feedback interviews. When discussing the strategies that were given in the initial questions, there were references made to other strategies not included on the Interview Schedule.

QUESTION 7 - HOW ARE YOU REACTING TO THE PROCESS OF BEING OBSERVED AND THEN INTERVIEWED? DO YOU FEEL THAT THE STRATEGIES BEING DISCUSSED ARE RELEVANT TO YOUR TEACHING? DO YOU THINK THE THINGS THAT WE ARE DISCUSSING HAVE HAD ANY

INFLUENCE ON YOUR TEACHING?

Parts of Question 7 were asked at the end of each interview in order to be able to evaluate whether the teachers were having any problems with their participation in the study or whether they felt they were deriving any benefit from their participation in the study. The reaction of the six Intern Teachers to the process of being observed and then interviewed was very positive. None of the participating Intern Teachers decided to withdraw their participation in the study.

One Intern Teacher did experience a problem with some feedback given by the researcher in response to a question from the Intern Teacher. The Intern Teacher, the Supervising Teacher, and the researcher were able to have a meeting to resolve the misunderstanding in which the Intern Teacher was given the opportunity to withdraw from the study. The Intern Teacher and the Supervising Teacher decided to continue their participation in the study.

The responses from the Intern Teachers after the first interviews, ranged from, really liking the process and not minding the intrusion of the researcher into the classroom to making a statement about how nervous they initially felt but were glad that the interview encouraged them to think about what they had just done in the classroom.

During the six interviews, the Intern Teachers indicated that they had spent time thinking about the different strategies between the interviews. Some of the comments were:

TA.3.7 - "I remembered that last week I didn't like how the pacing went at all. So this week I focused on that a little bit more. The interview makes you aware of certain things. When we finish I jot down a few things, like I wish I had done this or done that."

TB.3.7 - "Yes I have definitely been thinking about awareness. . . . keep them on track and keeping them from misbehaving."

TD.2.7 - "I have decided to keep them from wondering around the room and make them put their hands up to stop the call outs."

The six Intern Teachers all referred to an increased awareness about what they were doing in the classroom. They also verbalized about how the stimulated recall forced them to think about what they had just done in their classrooms and they felt that this was beneficial for their personal development.

TB.4.7 - "I must admit that I think a lot about the strategies. It heightens your awareness. It heightens my self-evaluation skills."

TC.5.7 - "It's sort of like effective teacher training, it sort of causes you to focus on strategies more."

TD.5.7 - "I think a bit more about what I am doing and I find myself saying something and then thinking that was mild criticism."

TE.3.7 - "I think it's great. It makes me sit down and reflect about what went on in some of the things that I said and did. It helps you remember what happened. It makes you aware."

In the concluding interview the teachers were asked to comment about the choice of the strategies, the timing of the interviews, and whether the process has had any impact on their teaching. Some responses from the teachers were:

TA.6.7 - "The strategies are relevant. I think that sometimes I get stuck in a rut and there are somethings I will probably never change. There are things like "pace" that you think about a little bit more. . . . it brings to the concious exactly what you are doing and maybe you can expand on it."

TB.6.7 - "I think the strategies were very good. I think that the process increases you awareness of different skills. . . .I can't say that they are my favorites, you also have to be aware of your weaknesses. . . . I am sure that it will cause some change. The more you are forced to think about these things the more internalized they become. . . The timing was good for me."

The statements given by the six Intern Teachers' were similar so examples from only some of them are included here. The teachers indicated that they enjoyed the experience and that there was an increased awareness of various teaching strategies.

Some of the Intern Teachers mentioned that they really liked the approach taken in this study in conjunction with the Teacher Effectiveness Training they were receiving in their district at the time of the research. Some of the respondents felt that the two approaches, working in conjunction with each other, really helped to increase their awareness of the strategies and helped them to recognize how they were using the strategies in their teaching.

A few of the teachers indicated that they did not know if there would be a direct effect on how they operated in the classrooms and wanted to know if the research process could be continued to the end of the school term.

It was not part of this study to determine whether any of the strategies being discussed were being modified by the teachers in their classrooms. There were indications in the interview protocols to suggest that some of the participating teachers were trying some different approaches as a result of their participation in this study.

SUMMARY

It was the purpose of this chapter to focus on the macro-analysis of the interview protocols. The interview protocols were analyzed using the strategies as the basis for the analysis. The first three interviews where feedback was given on Strategies 1, 2, and 3 were analyzed, followed by the second set of three interviews where no feedback was given on these strategies. Comparisons were then made in the verbal statements of the Intern Teachers in both situations.

The next section focused on Strategies 4, 5, and 6 where no feedback was initially given in the first three interviews and then on these same strategies with feedback provided. Comparisons were then made between the verbal statements made by the Intern Teachers in the feedback and the no feedback interviews.

The discussion then focused on the Intern Teachers' reactions to Question 7 on the Interview Schedule. Comparisons were made of the responses of the Intern Teachers to this set of questions dealing with their feelings about the process used in the study.

In response to Research Question 4, which it was found that the teachers, while describing their actions in the classroom, used vocabulary which was not specific to teaching or to teacher effectiveness training.

In response to Research Question 5, which it was found when feedback was provided by the researcher that:

(i) the teachers were able to recall more details about the lesson observed,

(ii) the "assimilation" or "accommodation" of certain strategies was more evident because of an increase in background information being given by the respondents,

(iii) the teachers used more "ego-enhancing" statements,

(iv) the teachers increased the number of self-evaluative statements, and

(v) the teachers referred to other strategies not included in this study.

In response to Research Question 6, which it was found that there were some common patterns of thinking among the respondents. The patterns of thinking found after the macro-analysis of the protocols were:

(i) the majority of teachers indicated a reluctance to accept Strategy 1, mild criticism, as being effective and used other terms to accommodate its use in their teaching,

(ii) the teachers made evaluative statements about the same strategies,

(iii) the teachers were inclined to use "ego-enhancing" verbalizations in relation to some of the strategies,

(iv) the teachers indicated that some of the strategies were being "accommodated" into their philosophy.

In response to Research Question 7, which it was found that:

(i) all of the teachers reported an increased awareness of different teaching strategies,

(ii) the teachers indicated that they spent more time thinking about the use of various strategies,

(iii) the teachers noted that stimulated recall encourages teachers to self-evaluate their own performance,

(iv) the teachers felt that the interview process used in this study was valuable in conjunction with the effective teacher training that most of them were taking, and

(v) the teachers were unable to identify any changes in their teaching practice as a result of the interactions with the researcher.

CHAPTER 7

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

The recent emphasis in the research on teaching has been on process-product variables. This research has led to the acceptance by many educators of what are considered to be effective teaching practices. The identification of effective teaching strategies has led (a) to educational efforts with the aim is to increase teacher awareness of these effective strategies and (b) to the introduction of training programs designed to increase the classroom use of these strategies.

Since teacher thinking is a determining factor in the adoption and implementation of improved classroom practices it becomes desirable to have a greater understanding of the thoughts teachers have about the instructional processes they use. However, teacher thinking cannot be readily studied by direct means. Teacher verbalizations of their thought processes serves as an indirect indicator. It is for this reason that the focus of the present study is on teachers' verbalizing about the teaching strategies they use and on the degree to which the supervisory process can affect teachers' abilities in this area.

Purpose

This quasi-experimental study was designed to be exploratory and descriptive. The study examined the degree to which teachers were able to verbalize about the use of selected teaching strategies in their classrooms. The study also investigated the differences in the degree to which the teachers verbalized about these strategies, while reflecting on their actions, in feedback and no feedback interviews.

Methodology

In the first phase of the study a survey instrument, designed for this study, was used to identify differences in the perceptions of teachers concerning the desirability and frequency of use of 54 teaching strategies. Comparisons were made between the 17 responding Intern Teachers and 15 responding Supervising Teachers. This information was used to select six strategies for detailed examination in the second phase of the study.

In the second phase, six of the Intern Teachers were selected from those who responded to the survey instrument and were asked to volunteer to participate in the observation and interview part of the study. The six Intern Teachers were observed and interviewed six times each for a total of 36 observations and interviews. During the interviews the Intern Teachers were asked, using the stimulated recall method, to reflect on the lesson observed and to verbalize about the teaching strategies they used. In the first three interviews with each Intern Teacher, the six respondents were asked to reflect about all six strategies selected for this study. The mediator provided stimulus points, probing remarks, and feedback statements about the first three of the strategies. The mediator provided no feedback about the remaining three strategies. In the second set of three interviews the process was reversed with no feedback provided for strategies 1, 2, and 3 and detailed feedback provided for strategies 4, 5, and 6.

During the observation phase the researcher made extensive notes about the use of the six strategies in the classrooms. These notes were the basis for the stimulus points, probing remarks and feedback statements used with the Intern Teachers as they reflected on the strategies being discussed.

Analysis Techniques

The purposes of the analysis were four-fold.

1. To determine what differences in perceptions existed between Intern Teachers and Supervising Teachers about the use of various teaching strategies and whether any differences were statistically significant.

2. To determine which teaching strategies could be used as the basis for the interviews with

the Intern Teachers.

3. To determine the degree of change, if any, in the types of teacher thinking as identified in the verbalizations of the Intern Teachers using a content analysis procedure.

4. To determine how the mediator feedback or lack of feedback affected the content of teacher verbalizations in the stimulated recall sessions.

FINDINGS AND CONCLUSIONS

In reviewing the findings and conclusions of this study the reader should bear in mind the limitations of the study, namely, (1) the small number of participants in both phases of the study, (2) differences among the teachers in their ability to verbalize about the identified strategies, (3) the ability of the researcher to establish rapport, be unobtrusive, and stimulate teachers' verbalizations, and (4) the ability of the researcher to control his biases. Because of these limitations, generalizing to other situations must be done with caution.

The findings and conclusions appear in seven sections each headed by a research question of the study.

1. What is the degree of agreement between Intern Teachers and Supervising Teachers about the importance and frequency of use of various teaching strategies?

Analysis of the perceptions of the Intern Teachers and the Supervising Teachers concerning, (a) the desirability of each of 54 strategies for use in their teaching, and (b) how frequently they employed each strategy in their teaching, revealed the following:

(i) for 16 of the 54 strategies there was high agreement between the two groups on the Desirability Scale and for 13 of them there was high agreement on the Frequency Scale;

(ii) for 28 of the strategies there was moderate agreement between the two groups on the Desirability Scale and also for 28 strategies there was moderate agreement on the Frequency Scale; and

(iii) for 10 of the strategies there was a low level of agreement on the Desirability Scale and for 13 strategies there was low agreement on the Frequency Scale.

The 54 strategies were classified into five categories and means computed for each strategy. The higher mean scores for Intern Teachers and the Supervising Teachers were compared. It was found that the Supervising Teachers rated 33 of the strategies higher on the Desirability Scale than did the Intern Teachers. On the Frequency Scale, the Supervising Teachers rated 29 of the strategies higher than did the Intern Teachers. There was on Desirability Scale strategy and two Frequency Scale strategies for which perfect agreement between the Supervising Teachers and the Intern Teachers existed. The Intern Teachers scored 20 strategies higher on the Desirability Scale and 23 strategies higher on the Frequency Scale than did the Supervising Teachers.

The data for these 54 strategies were subjected to analysis of variance in order to identify any statistically significant differences in means between the two groups. It was found that:

(i) There was no statistically significant differences between the Intern Teachers and the Supervising Teachers on any of the 13 "Classroom Climate Strategies" either for desirability or frequency.

(ii) There were no statistically significant differences between the two groups on the 19 "Classroom Interactions Strategies" on the Desirability Scale; there were, however, significant differences between Intern Teachers and Supervising Teachers on the Frequency Scale, namely, "use a variety of instructional techniques," and receive external supervision".

(iii) There was a significant difference between the two groups in one of seven "Student Management Strategies", namely, "have a system of rule" on the Desirability Scale, however there were no significant differences between the two groups on the Frequency Scale.

(iv) There was a statistically significant differences between the two groups on one of the ten "Instructional Organization Strategies" on the Desirability Scale that being "organize the class to increase learning time" and one on the Frequency Scale that being "explain the purpose of each lesson.

(v) There were no statistically significant differences between the two groups on the five "Student Evaluation Strategies" on the Desirability Scale: there was, however, and significant difference between the Intern Teachers and the Supervising Teachers on one of the strategies on the Frequency Scale, namely, "use external standardized tests."

When making comparisons between the Intern Teachers and Supervising Teachers about the order in which the two groups rated the 54 strategies, as to their desirability and frequency of use, it was found that, (a) the differences in the ratings five to the strategies by the two groups was more in agreement on the Desirability Scale than on the Frequency Scale, (b) in four of the five strategy clusters the two groups rated the same strategy first on the scales, (c) in four of the five clusters the two groups rated the same strategy as being least desirable on the Desirability Scale, and (d) in three of the five strategy clusters the two groups rated the same strategy as being used least frequently, and (e) the differences in ratings within the clusters were not great with many being within the same "level of agreement."

The findings indicate that some differences existed in the perceptions of Intern Teachers and Supervising Teachers with respect to the desirability and frequency of use of the 54 teaching strategies. Differences in the means were found when comparing the responses of the two groups. However, when the orders ratings were examined it appears that the differences in perception between the two groups is not great as the order in which the strategies were rated was similar for both groups. The analysis of the variance did not indicate many strategies with statistically significant differences. This may be due to the small number of participants used in the current study.

It was concluded that even though there were some differences in the mean scores of

Supervising Teachers and Intern Teachers, the similarity in rankings of their responses indicates that the differences in perceptions between the Intern Teachers and the Supervising Teachers were not great. The similarities and differences between the two groups may be influenced by (1) differences in length of teaching experience, (2) differing environmental experiences while teaching, and (3) recency of contact with formal courses or training in teacher effectiveness.

2. To what degree is the ability of teachers to verbalize about the use of teaching strategies in the classroom affected when verbal probing is present or absent as teachers reflect on their teaching?

The coding of the interviews identified 4,169 teacher verbalizations. Of the total, 64.3 percent of the teacher thoughts were given when probing was being provided by the mediator, and the remainder, 35.7 percent were produced when no feedback was being provided by the mediator.

It appears that teacher ability to provide verbalizations relative to a strategy can be enhanced if teachers are first, provided with a training process where they are exposed to various types of probing to increase their awareness of the use of different teaching strategies.

Referring to Table 5.4, there was a considerable increase in the number of verbalizations generated in the feedback interviews as compared to the no feedback interviews. All "types of thinking" categories showed increased relevant verbalizations as a result in the interview process.

(i) Of the Code 1, planning thoughts generated, 30 percent were in no feedback interviews and 70 percent in feedback interviews.

(ii) Of the Code 2, teaching thoughts generated, 37 percent were given in the no feedback interviews and 63 percent were given in the feedback interviews.

(iii) Of the Code 3, analyzing and evaluating thoughts generated, 35 percent were in no feedback interviews and 65 percent were in feedback interviews.

(iv) Of the Code 4, apply to future situations thoughts, 47 percent were generated in no feedback interviews and 53 percent were in the feedback interviews.

It is concluded that probing remarks, feedback statements, and stimulus points can be used to increase teachers' verbalizations about the use of various teaching strategies in their classrooms. But, merely asking the questions as suggested by Grimmett (1983) does not appear to ellicit much more than a limited reaction from teachers. Questioning techniques will increase the extent of the relevant information provided by the teachers in interview situations. A supervisor, using probing methods, can increase the amount of relevant content in the verbalizations in (1) planning thoughts, (2) teaching thoughts, (3) analyzing and evaluating thoughts, and (4) apply to future situation thoughts.

3. What are the dominant types of thoughts verbalized by teachers when they are encouraged to reflect on their actions in their classrooms?

After the content analysis of the interview protocols it was determined that 44.8 percent of the verbalizations reflect teaching thoughts, 43.8 percent were analyzing and evaluating thoughts, 8.6 percent were planning thoughts, and 3.0 percent were apply to future situation thoughts.

These findings are in agreement with other studies done on the types of teacher thinking. Clark and Peterson (1986:272) report that if ". . . one looks only at the studies in which normal learners were taught the percentage of interactive thoughts reported . . . was between 39% and 50%." The teaching thoughts or interactive thoughts have been found to be the most prevalent in teachers' reflections on their own teaching. The analyzing and evaluating thoughts are high in the present study, as most studies divide this category into sub-categories. This was not done in this study and "lumping" was present as a result. The "planning and apply to future situation thoughts" had the smallest number of teacher verbalizations. This finding is in agreement with Tuckwell (1980).

It appears that teachers, while reflecting on their teaching, are able to verbalize thoughts related to the act of teaching and are able to analyze and evaluate their use of some strategies they used in their teaching. Teachers are, to a lesser extent, able to provide verbalizations relative to "planning" and "apply to future situations."

4. What vocabulary do teachers use in describing the various teaching strategies they employ in their classrooms?

After the analysis of the interview protocols it became very apparent that teachers do not use an "occupational argot" or language which is specific to the field of teaching. This was evident even though the Intern Teachers had just completed their university training and all but one was taking Teacher Effectiveness Training offered by the Edmonton Public School District at the time of the study. One teachers of the six teachers used a very limited amount of vocabulary that was related to teacher effectiveness training. Some examples of teacher language have been randomly selected from the interview protocols to illustrate this point. The statements made by the teachers were:

TA.2.3	"I glare a lot. I am always doing that. Sit down. Move over. I probably do that to try to get them to quiet down."
TB.1.6	"I usually know the ones that will usually answer the questions. In certain lessons if I see a child who rarely answers, quite often I'll pick up on that opportunity and ask them to respond a few more times thinking that this might be a topic of interest to him."
TC.2.2	"Yes I don't think that anything was too long. Each activity was different. The two activities were rising and falling, the two were similar but the first one was more sort of a lead to the second."
TD.1.2	"That was probably my fault. I was sort of playing it by ear. I wasn't sure who was finished on the pages and that, and I was trying to keep ahead of them and assign more work."
TE.4.6	"A lot of the kids that I usually try to get to weren't here today. We have five away this morning so that makes a big difference. There are some of them that I try to get to first."
TF.6.6	"When I walked around the room, some kids had done the four parts and some were short and had a lot of room left on the paper and were wondering what they were supposed to do."

It would appear that if teachers and supervisors are going to get the desired benefits from an interview or "isotopex" process the language used needs to be similar so communication can be honest and open and not hidden in technical terminology. The "horizontal approach" and a collegial relationship should be established so that communication between the supervisors and the supervisees and its effects on evaluation, as described by Gitlin, et al. (1984:52) referred to in Chapter 2 seems to apply.

5. In what ways does verbal probing by a mediator affect the content of verbalizations about the use of teaching strategies?

After the macro-analysis of the interview protocols it became apparent that the probing done by the mediator had an effect on the content of the verbalizations by the teachers in the following ways:

(i) The six teachers were able to recall more detail of what occurred in the classroom, the historical background, and specific information about students that were related to the strategy.

(ii) The six teachers expressed their "assimilation" of some of the teaching strategies into their philosophy by expanding on the rationale behind certain behaviors they exhibited. This is the "Implicit Theory of Teaching" discussed in Chapter 2.

(iii) The teacher began to "accommodate" certain strategies into their philosophy. This was particularly evident in the discussion of Strategy 1, "the use of mild criticism" where four of the six teachers reverted to their original position on the strategy.

(iv) The teachers were inclined to be involved in "ego-enhancing" and "defensive" thoughts by identifying variables within the environment over which they had little or no control. They felt this had a negative effect on particular strategies in the classroom. Ego-enhancement and defensiveness were particularly evident when discussing "pace of the lesson" and "awareness of what is occurring in the classroom."

(v) The number of self-evaluative comments increased when feedback was provided. The most notable change occurred on strategies 4, 5, and 6 when feedback was added in the second set of three interviews.

(vi) When feedback was provided the Intern Teachers' verbalizations increased relative to other strategies not included in this study.

In conclusion, it appears that the probing by the mediator had a meaningful impact on the content of the verbalizations by the six Intern Teachers. It appears that when feedback is provided, the teachers, while reflecting on their teaching, increased information about their philosophy of teaching.

6. Are there common patterns of verbalizing among teachers as they reflect on their teaching in classrooms?

It was found, after the macro-analysis of the interview protocols, that there were some common patterns in some of the teachers' verbalizations about the use of specified strategies in the current study. Some of the patterns existed in both the feedback and no feedback interviews.

If the teachers were "accommodating" the strategy, as they appeared to be doing with Strategy 1, "the use of mild criticism", they were inclined to apply terms to the strategy which enabled them to fit that strategy into their personal philosophy about teaching. Some of the terms used were, "constructive," "guiding," and "helpful hints." This was done by four of the six teachers.

Some of the strategies ellicited an evaluative statement from the teachers. The most notable being Strategy 2, "the pace of the lesson." The six teachers usually started their comments with, "I think the pace was . . .."

The teachers were inclined to use "ego-enhancing" or "defensive" verbalizations when discussing some of the strategies. This was done by referring to outside influences over which the teachers felt they have little or no control. Strategy 2, "pace of the lesson," and Strategy 3, "awareness of what is occurring in the classroom" are the most notable strategies where this type of verbalization occurred. This was done by four of the six teachers.

All six teachers expressed agreement with Strategy 5, "directly discipline at guilty students only," and yet their verbalizations included reference to where the entire group was disciplined at some point during the lessons. They appear to have "accommodated" this strategy to their philosophy and yet were not utilizing it at certain times in their teaching. They took a "defensive" position when asked to explain their behavior in this regard.

When the teachers were discussing Strategy 4, "keeping directions to a minimum," they were inclined to refer to directions that were given to the entire class. Only after probing did they provide information about exchanges between themselves and individual students.

When verbalizing about Strategy 6, "asking students to respond to questions," the six Intern Teachers expressed their own philosophies about desirable practices with this strategy. One of the six teachers indicated that he or she was experimenting with different techniques related to this strategy.

In conclusion, it appears that there are patterns to teacher thoughts and these patterns are sometimes related to the strategy that was being discussed. The above patterns were not consistent for all of the teachers. The patterns of verbalizations were frequent enough to suggest that they should be given more consideration when examining teacher reflections about teaching practices.

7. To what degree does the process of reflection on action increase teachers' perceived awareness and reported use of effective teaching practices?

After examining the teacher responses to Question 7 on the Interview Schedule it was found that:

(i) all of the teachers reported an increased awareness of different teaching strategies as a result of the process,

(ii) the Intern Teachers verbalized about spending more time thinking about the strategies in relation to their teaching practices,

(iii) stimulated recall encourages teachers to think about what they do and the teachers felt that it was beneficial,

(iv) three of the teachers indicated that they found the reflection on action interviews particularly beneficial in conjunction with the effectiveness teacher training, and

(v) all six of the teachers indicated that they were not sure if their reflection on actions was having an impact on teacher behaviors in the classroom.

It can be concluded that reflection on action, as perceived by the six Intern Teachers, does appear to increase their awareness of teaching strategies. It also increases their ability to verbalize about the use of those strategies in their teaching. It can also be concluded that reflection on action as perceived by the teachers is a beneficial process. It also appears that the teachers felt they were involved in more self-evaluation as a result of being forced by the process to verbalize about their teaching. The teachers did not perceive that there was a direct link between reflecting on action and any changes they were making in their teaching behaviors.

IMPLICATIONS FOR FUTURE RESEARCH

The present study of the perceptions and statements of teachers while reflecting on their actions is a relatively new area for investigation. This exploratory and descriptive study has revealed areas of interest where this research may have an impact and points to concerns where further research could be carried out.

1. Where differences in perception exist between Intern Teachers and Supervising Teachers about the desirability and frequency of use of teaching strategies then:

(i) studies could be designed to investigate the possible causes or sources of such differences,

(ii) studies could be designed to investigate whether differences in perceptions about the desirability of various strategies are reflected in the evaluation of teachers when the perceptions are the same or different from those of the supervisors,

(iii) studies could be completed to investigate the differences in perceptions of supervisors of teachers, experienced teachers, and inexperienced teachers, and

(iv) studies could be designed to investigate the knowledge that supervisors possess about differing perceptions among those they supervise.

2. Referring to the Survey Instrument, if this study were to be duplicated, the Frequency Scale classifications should be altered. Some of the teachers indicated difficulty with this scale stating that some of the strategies could not be placed into any one of the categories given.

3. It was found in the process of doing this research that some of the Intern Teachers felt that they were more able to recall specific events if the interview occurred in the same location where they were observed teaching. Some of the teachers appeared to trace their interactions in the classroom with their eyes in the course of the interview. This is a point that a researcher may want to consider when designing a study where stimulated recall is a strategy employed. Tuckwell (1980) makes some recommendations about the use of stimulated recall methods that might be considered in conjunction with the above suggestion.

4. The observations and interviews in this study were conducted one week apart. The teachers participating in the study indicated satisfaction with the time between the observations and interviews. They felt it left them time to reflect on their own comments between interviews and their own teaching. Optimal time between interviews is not established. A research design could be formulated which could provide more information related to this area.

5. While the teachers were verbalizing about their teaching, patterns of thinking emerged

and were related to particular strategies. Are supervisors of teachers able to recognize these patterns when teachers are verbalizing about their teaching? On which strategies are teachers more likely to express verbalizations which reflect the following:

(i) evaluation of themselves?
(ii) "assimilation" of the strategy into their philosophy?
(iii) "accommodation" of the strategy to their philosophy?
(iv) "ego-enhancing" verbalizations?
(v) "defensive" patterns of thoughts?

6. If teachers express an increased awareness of their use of teaching strategies in the interview situations, is the increased awareness reflected in their teaching practices?

7. It would appear from this study that there are considerable differences in the individual perceptions about the frequency of use of various strategies. This discrepancy was most notable in the interview protocols where "accommodation" of the strategy was evident. If teachers express that a particular strategy is part of their teaching, to what extent is there agreement between the teachers' perceptions and the actual use of the strategy?

8. If teachers don't use a vocabulary specific to teaching, that is, an occupational argot, could the wording of strategies affect teachers' perceptions of those strategies? What effects would be experienced with a supervisor using a technical occupational argot as compared with common language during the interview process? A study incorporating the effects of language could have a direct bearing on the evaluation and supervision of teachers.

9. If reflection on action is a good strategy for developing a broader knowledge about the philosophies of teachers, what impact could "reflection on action" have on the evaluation and supervision of teachers? How would evaluation and supervision practices incorporate personal characteristics into the evaluation and supervisory procedures used?

10. It was noted that the "reflection on action" when probing was given first appears to have increased the ability of the teachers to answer the questions when the probing was withdrawn. A study could be designed to investigate this further and determine whether this

increased ability on the part of teachers is sustained for any length of time. This finding also has implications for the training of teachers in universities or through teacher effectiveness training or education.

IMPLICATIONS FOR CURRENT PRACTICE

The findings of the current study of teacher verbalizations and their perceptions about the use of teaching strategies may have implications for current practice. Some possible implications are:

(i) If problems of communication exist because of the lack of a "professional argot" in the field of teaching then it comes necessary that some steps be taken to educate supervisors of teachers and teachers to use a common vocabulary so that communication can be readily understood by those involved in the field.

(ii) Supervisors need to become acquainted with the differences in perceptions among those whom they supervise. Only by knowing the philosophy of each teacher and the strategies which can be either be "assimilated" in or "accommodated to that philosophy can supervisors assist in the education or re-education of a teachers. These elements may need to be included in the training of teacher supervisors.

(iii) Supervisors of teachers and teachers themselves may need to be educated about the various strategies they employ while verbalizing about educational practices. If "ego-enhancing" and "defensive" statements are being made during interviews, the parties involved need to be aware that those strategies are being utilized.

(iv) It would seem that teachers need training in teaching practices as well as encouragement to expand their repertoires in this area.

(v) Teachers can become aware of what they do in classrooms and can become aware of what they do is not always in agreement with their stated philosophy of teaching practices. This too has possible implications for inservice programs for teachers.

(vi) There is a current movement toward more intensive supervision of teaching personnel. A finding of this study was that teachers, by increasing their awareness of performance, were more reflective of their own performance. Consideration should be given to the advantages and disadvantages of having teachers become introspective about their own teaching.

RESEARCHER REFLECTIONS ON THE FINDINGS

In the current exploratory and descriptive study some of the findings were anticipated by the researcher, while, other findings were not expected from the analysis of the data in the two phases of this study. Some of the anticipated and unexpected results are as follows:

(i) The researcher and others who reviewed the survey instrument felt that there would be greater agreement between the Intern Teachers and the Supervising Teachers about the Desirability and Frequency of use of the 54 teaching strategies. It is interest to note that the Supervising Teachers rated more of the strategies higher than did the Intern Teachers. Also, of the six strategies where there was a statistically significant difference, the Supervising Teachers rated five higher than did the Intern Teachers.

(ii) It was expected that the Intern Teachers would be more capable of verbalizing about their teaching in the no feedback situations than was found in the study as five of the six teachers were taking Teacher Effectiveness Training with the Edmonton Public School District at the time of the research.

(iii) It was expected that providing feedback would enhance the ability of teachers to express themselves about their teaching practices and this was found to be so.

(iv) It was expected that the Intern Teachers would include more self-evaluative comments in their verbalizations because of the training they were currently involved in and because they had just recently completed their university education. The six Intern Teachers evaluated their performance only in relation to a couple of the six strategies.

(v) The "ego-enhancing" and "defensive" verbalizations were expected, but the commonality of those verbalizations was unexpected.

(vi) The language used by the six Intern Teachers to describe their performance in the classroom was an unexpected finding. The almost total lack of a "professional argot," even though the teachers had just recently completed their university education and were taking a Teacher Effectiveness Training program, made this finding even more surprising.

(vii) The ease with which the researcher was able to distinguish between "assimilation" and "accommodation" of various strategies from the verbalizations of the teachers was surprising.

(viii) It was found that the "isotopex" interview as described by Grimmett (1981) is not adequate to get meaningful information from the teacher about a teaching performance. Probing, feedback, and stimulus points are necessary fro the initial questions to ellicit a response with enough content to be of assistance to evaluators or supervisors of teachers.

CONCLUDING REMARKS

The current study was inspired by the researcher's interest in the supervision of those teachers who are working toward adopting more effective teaching strategies in their classrooms. Knowing that the meaningful supervision of teachers for the improvement of instruction is very time consuming, it seemed logical that teachers not only need to be aware of effective teaching practices, but they need to constantly reflect on what they are doing and be able to evaluate their own performance. As noted in Chapter 2, teachers are not good self-evaluators. This study was designed to investigate what effects a supervision process could have on a teacher's ability to verbalize about teaching strategies.

As a result of the treatment used, it was found that the six teachers in the study became more introspective about their teaching. This was evident from increases in the four types of teacher thinking examined, among which was one central to the purpose of the study, namely, "analyzing and evaluating thoughts."

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APPENDIX A

SURVEY INSTRUMENT

Desirability and Frequency of Teaching Processes,
Strategies, and Skills

The following is a list of "teacher should" statements. It is requested that you respond to each item as given using your personal point of view.

Please indicate you opinion by drawing a circle around the response you decide most accurately reflects your feelings. Please note that there are two responses requested for each statement. The first scale deals with whether you feed the process, strategy, or skill is effective in your teaching. The second scale askes that you indicate how often you feel you use that item in your teaching.

Desirabiltiy Scale

HD - Highly Desirable, D - Desirable, SD - Somewhat Desirable, N - Neither Desirable nor Undesirable, U - Undesirable.

Frequency Scale

4 - Several Times a Day, 3 - About Once a Day, 2 - About Once a Week, 1 - About Once a Month, 0 - Infrequently or Never.

The teacher should:

1. ... use a system of rules that allow students to attend to their needs.
2. ...provide interesting material for more able students when they have completed work.
3. ...be aware of possible disruptions even when working with other students.
4. ...use lecture, factual questions, and supervised study as much as possible.
5. ...prevent misbehavior from continuing so other students are not affected.
6. ...concern themselves mainly with the academic needs of the students.
7. ...direct discipline at the guilty students only.
8. ...handle disruptive behavior in a low-key manner.
9. ...let the flow of the lesson respond to unpredictable occurrences.
10. ...move around the room and montior student work and demonstrate awareness of what all the students are doing.
11. ...deviate from designed lesson plans when the opportunity arises.
12. ...explain the purpose of each lesson.

13. ...organize the class to increase learning time.

14. ...use external standardized tests to determine whether material has been adequately covered.

15. ...use a standard signal to start the lesson.

16. ...receive supervision for evaluative purposes.

17. ...keep the giving of directions to a minimum.

18. ...use students daily work as most important for diagnostic and evaluative purposes.

19. ...communicate on a level students are able to understand.

20. ...give feedback when it is convenient to do so.

21. ...depend on self developed mastery tests in making decisions about student learning.

22. ...be clear, precise, and well organized when presenting information.

23. ...allow students to attend to their needs independently.

24. ...make sure that all students are listening before beginning instruction.

25. ...use test results to motivate, guide, and direct student learning.

26. ...use an experience, hands on approach for students.

27. ...use a variety of instructional techniques to meet the needs of the students.

28. ...know the level of ability and attention span for each student.

29. ...organize the class in small groups so students can share and help each other.

30. ...make an appropriate selection of students to answer questions.

31. ...use praise to reward outstanding work as well as to encourage lower achieving students to perform better.

32. ...concentrate on one task at a time.

33. ...require that the more able students do more work.

34. ...have high expectations for the achievement of all the students in the class.

35. ...use rephrasing, giving clues, or ask new questions to ellicit a response.

36. ...use an appropriate mixture of high and low order questions.

37. ...use mild criticism to communicate expectations for more able students.

38. ...use methods that meet the needs of the majority of students.

39. ...be able to attend to more than one issue at a time.

40. ...be aware of what is going on in the entire class.

41. ...ensure that the lesson has a smooth flow.

42. ...organize the class in traditional row patterns.

43. ...show that the teacher cares, accepts, and values students.

44. ...respond accuragely to obvious and less obvious meanings, feelings, and experiences of the students.

45. ...maintain the pace of the lesson.

46. ...be able to obtain compliance from the students.

47. ...treat all students the same regardless of ability.

48. ...have expectations consistent with curriculum objectives.

49. ...encourage the students to be responsible for having all the necessary materials at their desks.

50. ...receive external supervision with the aim of improving instruction.

51. ...provide immediate feedback on student work.

52. ...refer new concepts to concepts already learned by the students.

53. ...follow designed lesson plans.

54. ...feel that materials other than tests are of secondary importance.

APPENDIX B

INTERVIEW SCHEDULE

INTERVIEW SCHEDULE

The items in the Interview Schedule were selected from items on the Survey Instrument. The strategies that were selected for the Interview Schedule had high standard deviations among the Intern Teachers and were observable in classrooms. The standard deviations for each strategy is reported in Appendix D.

---

1. The use of "mild criticism" is considered to be effective with more capable students. Do you feel that you used "mild criticism" in the lesson and would you comment on its effectiveness for you?

2. Maintaining the "pace" of the lesson is a crucial strategy for a teacher to employ. How do you feel you incorporated the strategy of pace into your lesson? Do you feel the pace of the lesson was effective?

3. Teacher "awareness" of what is happening in the classroom is important for effective teaching. Can you recall ways in which you demonstrated you awareness os what was occurring in the classroom? Why is this strategy important?

4. It has been found that student learning can increase with keeping directions to a minimum. Do you feel you kept the directions to a minimum in the lesson observed?

5. Directing discipline at guilty students only is another effective practice. Did you direct discipline at only guilty students? Did you at anytime in the lesson direct discipline at the entire group?

6. The last question deals with asking students to respond to questions. What methods did you employ is asking the students to respond to your questions in the lesson observed?

7. How are you reacting to the process of being of being observed and then interviewed? Do you feel that the strategies being discussed are relevant to your teaching? Do you think the things that we are discussing have had any influence on your teaching?

APPENDIX C

25 STRATEGIES IDENTIFIED IN PROJECT QUEST AS BEING EFFECTIVE

(source MacKay, 1979)

25 STRATEGIES IDENTIFIED AS BEING EFFEICTIVE IN PROJECT QUEST:TEACHING STRATEGIES AND PUPIL ACHIEVEMENT

(source MacKay, 1979)

The strategies identified in Project Quest were used as the basis for the development of many of the strategies used on the survey instrument in this current study.

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1. Teachers should use a system of rules dealing with personal and procedural matters.
2. Teachers should prevent misbehaviors from continuing.
3. Teachers should direct disciplinary action accurately.
4. Teachers should move around the room and lot (monitoring seatwork).
5. Teachers should handle disruptive situations in a low-key manner (non-verbal, proximaty, eye contact).
6. Teachers should ensure assignments are interesting and worthwhile when children work independently.
7. Teachers should use a system of rules which allows pupils to carry out learning tasks with a minimum of direction.
8. Teachers should optimize academic learning time. Pupils should be actively involved and productively engaged in learning tasks.
9. Teachers should use a standard signal to get students' attention.
10. Teachers should not begin speaking to the group until all students are paying attention.
11. Teachers should use a variety of instructional techniques adapting instructions to meet learning needs.
12. Teachers should use an appropriate mixture of high and low order questions.
13. Teachers should be aware of what is going on in the classroom.
14. Teachers should be able to attend to more than one issue at a time.
15. Teachers should facilitate the smooth flow of the lesson or a smooth transition from one activity to another.

16. Teachers' behavior should maintain the pace of the lesson.
17. Teachers should be clear in presentations to the class.
18. Teachers should be able to motivate children.
19. Teachers should provide evidence of "caring", "accepting", and "valuing" of children.
20. Teachers should respond accurately to both obvious and less obvious meanings, feeling, and experiences of the children.
21. Teachers should select many different pupils to respond to questions.
22. Teachers should use techniques such as rephrasing, giving clues, or asking a new question to help a pupil give an improved response when pupil's answers are incorrect or only partially correct.
23. Teachers should use praise to reward outstanding work as well as to encourage pupils who are not always able to do outstanding work.
24. Teachers should use mild criticism on occasion to communicate expectations to more able pupils.
25. Teachers should accept and integrate pupil initiated interaction such as questions, comments or other contributions.

APPENDIX D

STANDARD DEVIATIONS FOR INTERN TEACHERS

STANDARD DEVIATIONS FOR INTERN TEACHERS

The following table presents the Standard Deviations scores for the Intern Teachers in the Survey Instrument. These scores were used to determine the strategies that would receive more indepth investigation in the observation and interview phase of this study.

The six strategies used to formulate the Interview Schedule are underlined.

The teacher should:	Desirability Scale	Frequency Scale
1. ... use a system of rules that allow students to attend to their needs.	.69	.60
2. ...provide interesting material for more able students when they have completed work.	.61	1.00
3. ...be aware of possible disruptions even when working with other students.	.43	.34
4. ...use lecture, factual questions, and supervised study as much as possible.	1.04	1.03
5. ...prevent misbehavior from continuing so other students are not affected.	.24	.32
6. ...concern themselves mainly with the academic needs of the students.	1.09	.82
7. ...direct discipline at the guilty students only.	1.46	.87
8. ...handle disruptive behavior in a low-key manner.	.46	.24
9. ...let the flow of the lesson respond to unpredictable occurrences.	.58	.83
10. ...move around the room and montior student work and demonstrate awareness of what all the students are doing.	.24	.00
11. ...deviate from designed lesson plans when the	.76	.79

opportunity arises.		
12. ...explain the purpose of each lesson.	.71	.75
13. ...organize the class to increase learning time.	.46	.90
14. ...use external standardized tests to determine whether material has been adequately covered.	.94	.64
15. ...use a standard signal to start the lesson.	.70	.39
16. ...receive supervision for evaluative purposes.	1.11	1.05
17. ...keep the giving of directions to a minimum.	1.00	.75
18. ...use students daily work as most important for diagnostic and evaluative purposes.	.62	.47
19. ...communicate on a level students are able to understand.	.00	.00
20. ...give feedback when it is convenient to do so.	.55	.24
21. ...depend on self developed mastery tests in making decisions about student learning.	.73	1.22
22. ...be clear, precise, and well organized when presenting information.	.24	.59
23. ...allow students to attend to their needs independently.	.86	.68
24. ...make sure that all students are listening before beginning instruction.	.32	.24
25. ...use test results to motivate, guide, and direct student learning.	1.20	1.13
26. ...use an experience, hands on approach for students.	.43	.81

27. ...use a variety of instructional techniques to meet the needs of the students.	.32	.51
28. ...know the level of ability and attention span for each student.	.49	.92
29. ...organize the class in small groups so students can share and help each other.	.84	.94
30. ...make an appropriate selection of students to answer questions.	.71	.45
31. ...use praise to reward outstanding work as well as to encourage lower achieving students to perform better.	.38	.24
32. ...concentrate on one task at a time.	.99	.97
33. ...require that the more able students do more work.	1.51	1.33
34. ...have high expectations for the achievement of all the students in the class.	.69	.72
35. ...use rephrasing, giving clues, or ask new questions to elicit a response.	.32	.33
36. ...use an appropriate mixture of high and low order questions.	.49	.61
37. ...use mild criticism to communicate expectations for more able students.	1.09	1.15
38. ...use methods that meet the needs of the majority of students.	.59	.45
39. ...be able to attend to more than one issue at a time.	.85	.60
40. ...be aware of what is going on in the entire class.	.43	.39
41. ...ensure that the lesson has a smooth flow.	.50	.49

42. ...organize the class in traditional row patterns.	.96	1.60
43. ...show that the teacher cares, accepts, and values students.	.24	.33
44. ...respond accuragely to obvious and less obvious meanings, feelings, and experiences of the students.	.38	.47
45. ...maintain the pace of the lesson.	.87	.72
46. ...be able to obtain compliance from the students.	.70	.45
47. ...treat all students the same regardless of ability.	1.36	1.20
48. ...have expectations consistent with curriculum objectives.	.71	.83
49. ...encourage the students to be responsible for having all the necessary materials at their desks.	.61	.39
50. ...receive external supervision with the aim of improving instruction.	.84	1.11
51. ...provide immediate feedback on student work.	.59	.47
52. ...refer new concepts to concepts already learned by the students.	.43	.80
53. ...follow designed lesson plans.	.88	.93
54. ...feel that materials other than tests are of secondary importance.	1.37	1.60